

**PT7 cuts costs**

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# Computer Weekly

Thursday, April 14, 1983

## Ex-boss Levy to be sued for \$2.5m

by George Black  
RAJ THOMAS, chairman of Altergo, the top British software house which called in the receiver last week, will sue managing director Leonard Levy who left the firm days before the disaster.

Thomas, who hired the American financier just three months earlier, said he would start legal proceedings to get the \$2.5 million promised to Altergo, as well as probably seeking damages against Levy.

"I do feel Altergo would have survived and thrived if it had got the financial stability Levy promised," said Thomas.

Visibly distraught after the tragedy of the collapse, he said he had been willing to slip into the background as Levy wanted.

"It would have been irresponsible to let the staff down for the sake of my own position."

But Levy had not come up with the money. He had represented himself as an extremely rich man

and when Barclays Bank refused to accept his Californian land as collateral asserted that he had many other assets.

"About 30 times he told me he would solve the problem. I was getting extraordinarily nervous, but he expressed absolute confidence," said Thomas.

Levy had done a lot of necessary things at the start, but his actions were getting "more and more questionable".

"At the end of the day I have to take responsibility - but I had to do something and he seemed like our last chance."

City institutions had been unwilling to lend while lawsuits with Isaac remained unsettled. These were resolved last December. He had known Levy for 11 years and had believed him to be a man with large disposable income - though now he is not so sure.

The American had provided glowing references from its stockbrokers. It came as "a bolt

out of the blue" when they found they had only five days to get alternative finance after Levy's shock exit.

"It was an utter nightmare. It's a shame it should end like this when order books have never been better."

If Levy had kept his word the firm could have been put on a footing to get bank help or go public this year.

Receivers Ipe Jacob and Maurice Whistall of accountants Thornton Baker this week considered 80 bids. They included one from Altergo business systems managers, who left to form the rival Bluebird Software, to take over their old firm. Others included Telecomputing and Data Logic.

Thomas blamed the bank which refused to raise the overdraft above \$600,000, for failing to see software as a long-term and capital-intensive investment. Altergo owes £1.2 million, IBM being among its creditors.



THOMAS and LEVY... Former friends going to court.

## Japanese decide on challenge to Trilogy

by Kevin Cahill  
JAPANESE computer manufacturers have set their sights on Dr Gene Amdahl's Trilogy computer family - which is only two years away from delivery.

Under the title of the Supercomputer project, Fujitsu, Hitachi, NEC and the National Telephone and Telegraph company are working on a new, very high speed serial processor.

According to the management of the Supercomputer project, the new machine will have an internal arithmetic functioning speed of 50 million instructions per second and should be ready for delivery by 1986, a year after Dr Amdahl's IBM compatible Trilogy machine is due on the market.

Although the Supercomputer project was started separately from the fifth generation project, there is a close liaison between the two teams. The fifth generation system requires a very fast serial processor, in addition to the predominantly parallel and data flow architecture of which it will be built.

The Supercomputer project has escaped the limelight for some time, partly because at least two of the companies, Fujitsu and Hitachi, have been developing similar machines as a matter of normal competitive product development.

It is not clear why the Supercomputer project has suddenly been targeted on the Trilogy machine rather than the more traditional marketplace norm of IBM. Executives responsible for the project simply say that the benchmark has been changed. By implication, the real competition in 1983/86 is going to come from Trilogy and not, as was traditionally the case, IBM.



Trilogy's Amdahl

## DES clobbers technical universities

by John Riley  
THE new, technical universities have been clobbered yet again in this year's allocation of the Department of Education and Sciences three year, £100 million programme to back information technology and "new blood" lecturerships. Among the worst hit universities in the announcements being made this week, are Stirling, Salford, and City, with several

others expressing disappointment and bewilderment.

Some 70 permanent lecturerships have been created specifically to further information technology.

A further 242 "new blood" lecturerships, for academics under 36 years old, have been set up to redress the unsatisfactory age profile in the universities, and include a few computer related posts.

Despite a new externally funded

chair in information technology and the £40 million Wang manufacturing plant on the campus, Stirling received no IT backing.

Professor Duncan Timms, vice-principal of the university said: "We find it inexplicable. We are strong in the information systems area, particularly for business management."

The University Grants Committee, together with the Science and

Engineering Research Council, administering the DES cash, invited universities to tender for the posts earlier this year.

Brian Oakley, secretary of the SERC said: "We concentrated support where we believed it would do most good, and against the background of the Alvey report recommending centres of excellence for information technology in the country."

## IBM users in the cold

From page 1  
software like CICS, IMS and VTAM have cluttered it up, limiting some users to as little as four Mbytes of addressable space.

The main change in Extended Architecture is that it replaces 24-bit addressing with 31-bit addressing, thus creating more space for the juice-hungry applications programs, graphics, and data manipulation. The addressable space now available reaches up to 2,048Mbytes (two gigabytes). Although IBM says no additional storage is needed to run XA, the bad news is that the new release costs twice as much as the SP1.3 licence.

The mushrooming growth of many DP shops forced IBM to bring out MVS/XA in what some

users consider to be the mid-point of its design. Presentations by eight experimental MVS/XA users at the Share IBM User Group last month confirmed that the main need - that of adding more devices to the system and freeing user space - were coped with by XA quite smoothly, but these are really the only advantages to be gained at present.

Without a VM or a 4300 implementation - rumored to be on its way - MVS/XA is only supporting a few functions, of benefit only to the larger users who need more user space. As expected there is little change in performance and throughput with IBM repeating benchmarks of +6% to -7%, although IBM stresses that improved channel utilisation can boost performance.

## US go-ahead for teletext

by Howard Kasten  
THE Federal Communications Commission (FCC) last week authorized the broadcast of teletext material over US television channels. But the commission declined to specify a standard for broadcast, preferring instead to leave selection of a standard to the open marketplace.

Such a move will undoubtedly impede commercial development, as broadcasters, hardware manufacturers and consumers wait to

see which will become the de facto standard.

Notwithstanding this potential confusion, CBS, one of the country's three largest commercial broadcasting networks, began broadcasting teletext within days of the commission's approval.

The CBS system, called Retravision, is using the AT&T-backed technology, which is also supported by Time Inc. and NBC, another giant communications network.

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# Computer Weekly

Thursday, April 21, 1983 Number 856 35p

## Toshiba first with 'one on a desk'

by Kevin Cahill  
THE first working "one on a desk" combined phone, text and micro message system was shown at the Hanover Fair by Japanese manufacturer Toshiba.

The device, which the company called an Integrated Communication System (ICS) consists of a telephone, key pad dialling system, video screen and micro-computer based key board.

The three units are combined to produce a device which can transmit voice and data simultaneously, store and forward electronic mail and collect incoming mail in an electronic letter box.

In addition the device can be used to transmit integrated graphical data.

Toshiba said the ICS device would be the centrepiece of the company's office automation system, which is more advanced than many Western observers are aware of.

In the Toshiba showroom at the Hanover Fair, the company has an integrated minicomputer/teletext/printer and communications system all on one desk to show and for sale at around 13

million yen (about £35,000). The company gave no price with the Hanover machine but Japanese commentators say that the company has set itself a target of between \$1,000 and \$3,000 in the shops.

According to Toshiba the device when marketed will be able to carry 32 direct lines and up to 120 extensions, with automatic call-back, call transfer, teleconferencing and a handfree speaker phone to use while keying data.

The unit can pick up and store two hours worth of voice input messages and will accept messages for automatic transmission to up to 100 locations.

By actually introducing the device this year Toshiba has upstaged ICL, which plans to introduce a similar sounding product in combination with Clive Sinclair later this year or early next year.

The only reason Toshiba appears to be showing any reluctance to market the product is a probably unjustified fear that the ICS might develop a separate market from the "integrated desk" with which the company eventually wants to introduce the device.



BRACKENBURY... "Someone has to stand up to them!"

## OEM threat may see DEC in EEC court

by John Kavanagh  
UK SYSTEMS houses are preparing to go to the EEC with claims of restraint of trade against US minicomputer giant Digital Equipment (DEC).

The move comes as the small systems company Darkcrest finalises its case against DEC before taking it to the High Court next week to force the company to prove its software piracy allegations. And if DEC fails, Darkcrest will be looking for exemplary damages of £10 million.

Meanwhile systems houses are examining the potential impact of DEC's new guaranteed uptime feature in its maintenance contracts. The feature is seen as weakening DEC's competitors in the end user market - its own systems houses - by depriving them of maintenance revenues.

"A group of third-party companies has put together several thousand pages of concise information on DEC's restraint of trade," said Darkcrest managing director Nick Brackenbury. "Money has been spent on this on both sides of the Atlantic. Someone has to stand up to them."

Brackenbury said DEC had failed to back up its software piracy claims, made last summer. Last July DEC went to the High Court to get an order allowing it to search Darkcrest's premises for evidence. Since then both companies have said they would pursue the case to the end.

Darkcrest has always denied the charges. Last autumn it said it had the backing of other UK systems houses but they were afraid to put their views in writing. But DEC's UK managing director Darryl Barbe has said Darkcrest has not followed the software licensing rules in the same way as other firms.

"We keep asking them to substantiate their claims but they just keep putting us off," Brackenbury said. "Our reputation is at stake. So we applied to the court for a ruling on whether their original claim was falsely made. And they're now going round our customers trying to get information against us."

"We believe they are motivated in this by competitive business considerations and not by concerns about software piracy."

"It looks as if we are the trial case; they have accused others."

Brackenbury said he was "utterly astonished" that the government was backing DEC with projects such as its new software development centre. "The government is backing a US company which is using such tactics against a UK firm," he said.

DEC had no comment.

## IBM makes plans for Unix

IBM PLANS to support the Unix multi-user operating system on its Series 1 machines. 4300 mainframes and the personal computer, industry delegates at the Hanover trade fair learned.

It is understood IBM is to offer its Unix version - probably a development in line with Microsoft and Logica's Xenix system - as an alternative to the standard MS-DOS. The report is confirmed in a Venture marketing organisation survey and the software should be available this year.

## Lasers go out

BURROUGHS has dropped its laser storage system after five years and \$20 million of development. High production cost is given as the reason for the decision not to go ahead with manufacture, but reports from the US suggest that Burroughs was forced to shelve laser storage because it had no controller for the device.

Burroughs denies that the lack of a controller lay behind the action.

## BASF user group

BASF USERS in the UK have formed their own user group, the BCUA. Initial membership will be 14 and the association hopes to attract members from Europe. Chairman of the association is Brian Crowe, data processing manager of Norman Frizzell Motor and General.

## Hoskyns sales up

HOSKYN'S Group Limited, the UK computer services and information technology company, had sales of £26.5 million in 1982, compared to £21.4 million in 1981. This is an increase of 24%, the company's sixth consecutive year of record revenue.

## Artificial intelligence to go on sale

by Kevin Cahill  
THE world's first commercially available artificial intelligence system, recently demonstrated by Nixdorf Computers, will be offered to the marketplace early next year.

The system, which hasn't acquired a name yet, uses an inference engine designed by UK expert Stuart Savory, to apply the knowledge in a knowledge base to problems in specific areas of expertise.

The two applications on show at the Hanover Fair used the Expert System to help diagnose the cause of faults in a Volkswagen Golf, and to optimise a CPU and peripheral configuration for a Nixdorf 886X computer system.

According to Savory, Nixdorf's head of artificial development, the only way to overcome the shortage of expertise in the world is to have



NIXDORF... first.

multiple copies of experts. His method of achieving the non-biological multiplication of experts is to incorporate their knowledge, not their store of data, into a specially constructed knowledge base.

Using a Z80-based Nixdorf microcomputer and a rule based inference mechanism implemented in Pascal software, Savory has achieved something of a breakthrough in terms of an economic and functioning system. His only problem is to so develop the system that it can't be used to develop better versions of itself, thereby injuring its prospects.



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# UK fledgling is taken under wing

by Robert Parry  
THREE-month-old UK computer systems distributor Gulfstream Technology has been bought by Canadian venture capital group Byte Management Corporation. The all-share deal transforms Gulfstream into Byte's European subsidiary — the first outside North America.

It was Gulfstream's bid for UK distribution rights to the Canadian-built Hyperion portable IBM-compatible microcomputer that set the deal going. Hyperion is built by Dynalogic Info-Tech, which is part-owned by Bytec.

"We were looking for a substantial backer," says George Macfarlane, Gulfstream group managing director, "but never dreamed that the 20-strong company would be snapped up so quickly. Bytec made us an offer we simply could not refuse."

For Macfarlane, the unrefusable offer was a swap for his 250,000 Gulfstream shares — two thirds of the stock — for an undisclosed

number of Bytec shares and elevation to Bytec vice president for European operations. For the company it brings an immediate £125,000 from Bytec, and commitment to future financing.

"With Gulfstream as a 100% owned subsidiary, Bytec will be totally responsible for the finance it needs," says Bytec business development director Ross Tuddenham. "It gives us the chance to put more in to support the European market through a European subsidiary, rather than by dealing from Canada."

Bytec was formed in 1979 by Mitel president Michael Cowpland and Glen St John. It manages a portfolio of companies worth over \$60 million. The Hyperion portable micro from Dynalogic represents a large part of its business — Tuddenham reckons \$10 million worth a month will be shipped by August — and as a prelude to Bytec seeking a public offering will soon bear a Bytec badge.

Macfarlane predicts that Gulf-

stream — or Bytec, if potential name clashes with microsystems dealer Bytech in Reading are avoided — will ship 1,000 Hyperions this year, a modest 1% of the predicted UK market for computers between £2,000 and £4,000.

"Just two potential customers, a large corporation seeking machines to give to each of a 100 or so financial controllers and a bureau considering buying 400 as access to its mainframes, would make up half that number," he says.

Gulfstream Computer Products now has exclusive UK rights for the Hyperion as well as a range of intelligent terminals from Liberty Electronics. It will be adding another micro soon, probably the Pied Piper from another Canadian company 25% owned by Bytec, Semitec Electronics. This will sell for under £800, and be "very portable" says Macfarlane.

Its sister company, Gulfstream Computer Systems, provides turnkey business computers.



McFARLANE... was made an offer he couldn't refuse.

## The Week in Parliament Whitelaw is warned about Protection

RADICAL amendments will be made during the committee report stages of the Data Protection Bill, or both the Labour and Liberal parties will try against the third reading, says Secretary William Whitelaw last week.

The warnings were delivered by Roy Hattersley, Opposition spokesman for Home Affairs, at Simon Hughes, the new Liberal MP for Bermondsey, during a Second Reading debate when Mr Hattersley returned from the Easter recess.

Hattersley said the Opposition would not vote against the Second Reading because the Bill did at least establish the principle that the private citizen had a right to know what information about him or her was being held by private agencies or companies.

Hattersley said the Opposition believed the Bill had major flaws. He deeply regretted the absence of arrangements to give protection against the misuse of manually stored records.

Whitelaw was also sharply criticised for the alleged sweeping nature of exemptions.

Whitelaw claimed that exemptions were being kept to a minimum. Apart from data held for domestic and certain other limited purposes, the only data wholly outside the provision of the scheme was that dealing with national security laws.

All other data, including that held by police for crime prevention, would be registered and accessible by the registrar. No access could not be given to all police records if this jeopardised crime prevention.

Hattersley later described the Bill as being not so much an extension of civil liberties, but an Act to make the government's information technology programme possible. Under European sorting out, individuals against organisations processing their data, UK computer companies would be denied access to information held by the European collaborators.

The government, said Hattersley, had chosen to do the least possible to bring Britain into line with Europe.

# Data Logic saves 135 Altergo jobs

by George Black and Robert Parry  
ALTERGO Ltd and Altergo Business Systems have been rescued from receivership by Data Logic, saving jobs for about 135 of the staff.

Data Logic, the British systems house owned by the US electronics giant Raytheon, agreed with the receivers last week to buy two of the major Altergo assets.

Alan Thomas, Data Logic managing director, said: "We are delighted. We believe that we are now the leading IBM based software house in the UK." He added that Data Logic intended to keep the ex-Altergo staff together in the same groups "wherever possible."

Talks are continuing in this country and the US on the future of Altergo Software and £2 million worth of contracts in Saudi Arabia, Kuwait, Iraq, Jordan and Mauritania, of accountants Thornton Baker, are hopeful of disposing of

it as a going concern this week and are keeping the 35 staff on the books.

Negotiations are also going on for Altergo Services Ltd and Altergo Europe Ltd. Meanwhile smaller parts of the empire not in receivership are being snapped up. Optim Computers bought the tiny Altergo Micro Systems Ltd and offered jobs to its half dozen employees.

Optim managing director Mike Burden said the Altergo subsidiary would fit in ideally with its own Data Logic operation.

Data Logic has 700 staff and last year had sales of around £25 million. It moved into IBM systems when it acquired the bureau part of Computer Resources last year.

A "crazy history of cross-litigation" between Inssac and Altergo lay at the root of the collapse, Altergo chairman Raj Thomas said. The acquisition of the two Altergo operations gives it a bigger

penetration in the IBM Systems 34 and 38 market, says Data Logic marketing director Mike Brinsford. "We had a big drive to recruit more IBM staff anyway," he adds. "Altergo had always been a good competitor; their technical strengths have never been in doubt."

Data Logic will keep the Altergo staff groups together under its Professional Services division, and will continue to use the Altergo name for those parts of its operation.

It will not take on any other bits of the Altergo empire, but is interested in a Middle East contract won by the Altergo subsidiary but not included in Data Logic's buy.

The order, worth £1.8 million, is from Saudi Airlines. It and one for £1.25 million from United Arab Shipping Company, are to be sold off separately by the receivers.



THOMAS... "Now the leading IBM based software house in the UK."

## Mitel drops plan to build French exchanges

by John Kavanagh and Jack Gee  
FRENCH private telephone exchange manufacturers were relieved last week that the Canadian firm Mitel had dropped plans to build exchanges in France. Mitel said because of the recession, world demand for private exchanges was not strong enough to justify building the factory.

This means European manufacture of Mitel products will be based on new factories in Wales and West Germany. The company's UK arm is thought to be talking to IBM about building a new range of "unique switching systems". The companies are working together on development in Canada.

The big French firms Thomson-CSF, CIT-Alcatel, Jeumont Schneider and Compagnie Generale de Constructions Telephoniques now hope to organise a counter-offensive against the US telephone exchange invasion.

Mitel does 25% of its business outside the US and Canada.

## Inventors' bright ideas get a chance

by John Kavanagh  
A CHANCE for bright ideas from universities and private inventors to see the commercial light of day is being offered by Barclays Bank and the National Exhibition Centre in the form of the UK's first technology transfer exhibition.

The move comes hard on the heels of a US study tour by senior Barclays manager Matthew Bullock, who called on big UK companies to consider the success of their US competitors in working

with universities and small specialist firms rather than setting up massive research departments. The show is expected to introduce these parties to each other and to sources of finance.

"There is no doubt about the crying need for some way for universities to get their developments to the market," said Barclays Technology organiser Ernest Vincent. "This show will give them a much needed face-to-face rapport with industry."

Such shows have been held

across Europe for several years. A Geneva show, now in its tenth year, gets 680 exhibitors, over 1,000 new products and ideas and 100,000 visitors.

Vincent said he would be very happy with 250 exhibitors at this first UK show. "We have test-marketed the show to 100 potential exhibitors and 75% were interested in taking stands," Vincent said.

"They included London's Imperial College, large and medium-sized companies and organisations

right up to the Electricity Council."

Industry also seemed ready to consider university ideas. "We have visited companies like Plessey, Ferranti and BP and they all said very senior people would come," said Vincent.

The show will be at the National Exhibition Centre in Birmingham from February 21 to 25 next year. There will also be seminars on financing, developing and marketing new technology and inventions.

## Advertising moans pour in

by Andrew Thomas  
COMPUTER companies feature prominently in a new list of complaints prepared by the Advertising Standards Authority (ASA), with an average of one complaint a week for the last 12 months. And of the 51 cases reported to the ASA which fell within its remit, that is cases directly related to advertising claims rather than contractual wrangles, 22 were upheld.

Reasons for complaint ranged from mail order delays and non-availability of products to disputes over technical claims and compatibility with other equipment.

A spokesman for the ASA said that the number of complaints against computer firms did not reflect too badly on the companies concerned as the market was mushrooming at such a speed that there were bound to be gripes due to the sheer number of people responding to computer advertisements.

One of the commonest complaints was against claims that Basic was "just like plain English". The ASA came down on the side of the complainants in these cases, saying that although Basic was a simple language in computer terms, it was misleading to maintain that it bore much resemblance to English.

Sinclair Research came in for some stick over delivery delays and promises of the availability of the enigmatic Microdrive. Advertisement appearing in early 1982 claimed that the Microdrive would be available "later this year", but it has yet to appear.

Whitelaw claimed that exemptions were being kept to a minimum. Apart from data held for domestic and certain other limited purposes, the only data wholly outside the provision of the scheme was that dealing with national security laws.

All other data, including that held by police for crime prevention, would be registered and accessible by the registrar. No access could not be given to all police records if this jeopardised crime prevention.

Hattersley later described the Bill as being not so much an extension of civil liberties, but an Act to make the government's information technology programme possible. Under European sorting out, individuals against organisations processing their data, UK computer companies would be denied access to information held by the European collaborators.

The government, said Hattersley, had chosen to do the least possible to bring Britain into line with Europe.

## Software wholesaler opens up in UK

by Robert Parry  
US SOFTWARE wholesaler Softel Computer Products has moved into the UK. A warehouse in Feltham, backing on to Heathrow Airport, will house £1 million of software on disc and cassette, and be the centre for Europe, the Middle East and North Africa of Softel's bulk purchase and re-selling operation.

The warehouse will carry stocks of 1,800 software lines from about 150 suppliers, for sale to micro dealers. There will be no sales direct to end users. Products from the US are shipped in by air, for distribution with UK-sourced software to Europe.

Apart from being a one-stop shop giving dealer purchasers a wide variety of games, educational and business software for popular micros like the Apple II, IBM PC, the various Commodore machines and Texas Instruments' 990/4, Softel sets itself up as doing all the work for the dealers.

It has a product evaluation group which selects what software Softel will handle, based on technical characteristics of the software and on forecasts of what will be a good seller at retail level. Packages can be ordered for a month's evaluation, and a best-sellers chart is produced as a guide. So far this is based on US sales, but a UK version will come out eventually.

Most of the lines carried so far are of US origin, and include well-known names like VisiCorp, Micropro, Microsoft and Peachtree. But the company is looking for UK products to sell here and in the US.

"We believe the UK has a great deal to offer for sale in the US," says UK managing director Herb Blumstein. "We want to develop that potential and will be setting up a product evaluation group here in the UK."

Having the Feltham operation in action should cut down the turnaround time for European customers from one or two weeks to one or two days, reckons Softel president Bob Left, and will save dealers from importing problems. It also means they will be able to buy in smaller quantities.

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## FACE TO FACE WITH SYSTEK

# "If I were in the market for another system I would go back to SYSTEK"

SYSTEK have been supplying Terry Dart, the Data Processing Officer (Administration) at the Imperial College of Science and Technology for four years. Since that time he says he has rarely had cause for complaint about their equipment or service. "Before that we suffered so much from lack of support from our previous supplier, you can't imagine. I have always found SYSTEK to be very helpful and cooperative, making certain that those people who can answer difficult questions are there when you want them. I've found the support I've needed from SYSTEK and on that basis I've recommended them to a number of other people."

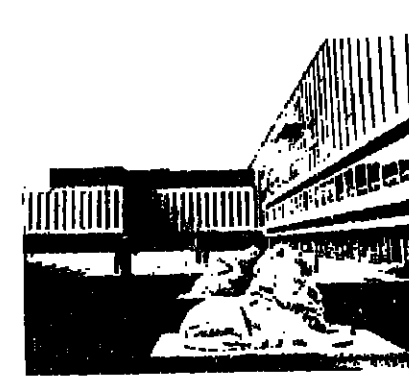
Terry explained that the college wanted to make a move so that they could run two machines together, their existing DEC PDP 11/55 and a new PDP 11/54. It appeared that SYSTEK were the only company actually

prepared to sit down and talk to them about it and do the initial work required. "We were very pleased with the overall end result. Not only did they try hard to understand our particular problems, they came up with a very competitive price plus some impressive software solutions. And I have to admit I couldn't fault the original installation. When we installed a further new DEC PDP 11/44 we assumed it would be equally easy, but we had more than a few problems to solve. SYSTEK I'm glad to say got there quicker than most."

"If you're in the situation of only having a certain amount of money to spend, like most universities, it is possible to get a good price from someone then find they drop you in it. After my experience with SYSTEK it would be very difficult to think of going elsewhere, because quite simply they provide the kind of service I'm looking for."

"The sign of a good supplier," Terry concluded, "is that you'll go back to them. And I would certainly go back to SYSTEK."

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Imperial College of Science and Technology, London

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## Wilkes Computing Announce the

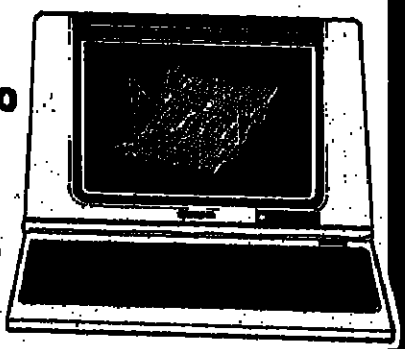
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## Semaphore gets computers talking

by Andrew Thomas  
A MAJOR aid to systems interconnection made its first appearance last week. Semaphore, the product of Beasignton-based Albetros, enables almost any computer to communicate with another for as little as £125 a machine.

Albetros started life in 1976 as a software consultancy, and managing director Peter Hills says it was during this period that the need for a simple, reliable link between different computers became apparent.

Semaphore provides that link in two ways: a piece of software running as an object program in each machine to be linked, and the Blue Box.

This not only enables minis and mainframes to talk to each other, but can turn a dumb terminal into an RJE station, or provide remote access to any RS232C

equipped peripheral for as little as £690.

The machine with which Semaphore can be used will eventually include most minis, minis and mainframes, says Albetros marketing manager Hugh Griffiths.

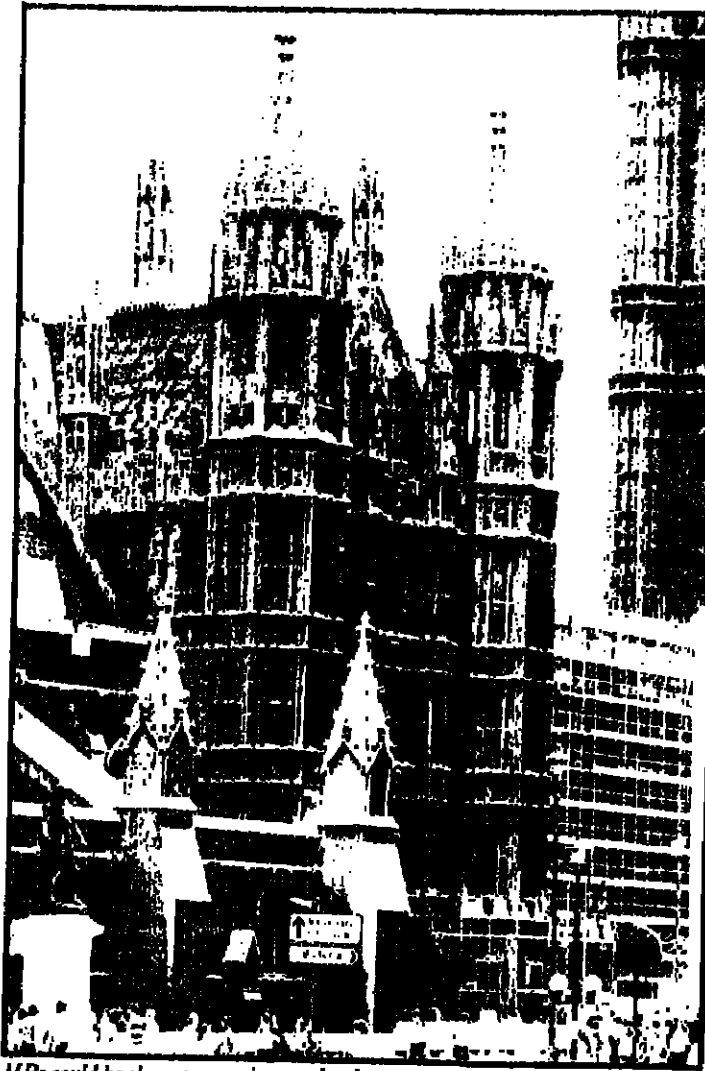
"Semaphore operates with any CPM, CPM-86 or MSDOS micro, and with DEC, Prime, Data General and IBM minis and mainframes," he says. "But if you want a version for any other machine, it will be ready in a matter of days rather than weeks."

The software is supplied ready compiled for each different machine, taking into account what Griffiths refers to as its "I/O file handling eccentricities", and is written in a mixture of Pascal, assembler and Fortran.

"Semaphore's unique, there's a huge market, and it's British," he says.

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MPs could be closer to constituents thanks to computers.

## Computers may link MPs and their voters

By John Kavanagh

MEMBERS of Parliament could soon have far better contact with their constituents — thanks to information technology.

The consultancy EIU Informatics has been contracted to look at MPs' office automation needs in the light of growing concern about their office procedures.

At present office automation in the Commons consists of an online information system in the library, using terminals to the big Scicon bureau, and a mish-mash of standalone word processors from a large variety of suppliers.

"In general word processors and personal computers have been brought in by members on their own initiative," said Dr Gordon Ross, advanced office systems manager at EIU. "We have to see

if this is the best way to carry on. There is certainly a groundswell of opinion that some form of automation is needed. Some members are very aware of the opportunities."

Ross added that the aim of office automation would be to "improve the interface between Members and their constituents". EIU would be studying automation in the Commons but the possibility of putting systems into constituencies had not been ruled out, he said.

The study will cover the needs of Members, research assistants and secretaries.

EU Informatics was formed a year ago as an automation consultancy offshoot of the market research and consultancy firm The Economist Intelligence Unit, part of the group which produces *The Economist* magazine.

## Bank staff call halt to computers

By Andrew Thomas

BANK staff voted for a tougher stand over new technology last week — against the advice of their national executive. Delegates at the annual conference of the Banking, Insurance and Finance Union (BIFU) voted by three to one to resist the introduction of new technology until employers sign agreements on its introduction.

And the computer section of the 152,000-strong union passed a motion demanding that in future, software should be included as an integral part of any new technology agreement.

The militant attitude taken at the Blackpool conference means that any attempt by management to introduce new technology without first agreeing the terms on which it is to be installed would result in industrial action and the refusal of staff to operate the equipment.

At present, only one such agreement exists, that being between the Cooperative Bank and its employees.

Chris Cater of Bifu's national executive warned delegates not to set the rank and file union members an objective which they would be unwilling to support. But the overwhelming rejection of his advice indicates the growing fears in the finance sector over the introduction of new technology, and of the union's inability to control it.

Deputy general secretary Terry Molloy said that the debate was the most important of the conference.

"New technology is the greatest challenge we face, not just for Bifu, but for the whole of the trade union movement. Our policy is to support new technology, but only if implemented via new agreements."

"We are facing an unemployment figure of four million and new technology means that jobs are in danger in banking, building societies, insurance and finance."

The conference heard how financial enhancements to the clearing houses automated payments system, Chaps, would have a disastrous effect on walks messengers.

The staff, responsible for regular interbank deliveries, would no longer be needed when Chaps2 goes live. The national executive was called on to draw up a report urgently on Chaps developments.

The Royal Bank of Scotland delegation moved a motion asking that DP staff not be overlooked for promotion to general management. It claimed that their specialist skills tended to exclude them from management training schemes, resulting in few opportunities to progress away from the DP area.

Barclays Bank and Williams and Glyn's delegates were concerned that as more and more installations moved towards a prime shift only operation, shift workers faced a reduction in living standards commensurate with the loss of shift allowance.

The conference carried the motion seeking to implement shift wind-down payments for all shift workers. Bifu is to prepare a report on the subject for presentation at next year's conference.

### SALES BRIEF

## DPS 8 nets \$17m for Honeywell

HONEYWELL has scored two orders worth almost \$17 million for its DPS 8 computers. The bigger order comes from China, with funding from the World Bank for \$15 million worth of computers to be installed at 14 universities. They will be used for applications including student enrolment, library information and software development to handle the 4,000 Chinese characters.

The other order, worth \$1.2 million, comes from the US National Aeronautics and Space Administration (NASA) for data capture and analysis at the Kennedy Space Center.

### Betting on CTL

BOOKMAKER Mecca is computerising its credit betting and has chosen a CTL 8066 from UK-owned systems house Computer Technology. Mecca has ordered two of the computers with CTL's fail-safe Momentum option including Momentum link, peripheral switching and mirror disc.

### \$80m disc drives

AN \$80 million order for disc drives has been lodged with Tandem Corporation of the US by Non-Linear Systems for its Kipro microcomputers. The order includes the TM100 series of 54in rigid disc drives, the TM50 half-height floppy drives, and the TM502 54in rigid drives for two discs.

### Super order

CRAY Research has sold another of its 1S supercomputers worth \$4.3 million to Honeywell UK for a contract with the Royal Naval Establishment at Portsmouth. Sales of Cray supercomputers have picked up dramatically since price cuts last year, and are currently running at more than one a week.

### Boost for Cii

FRENCH State-owned Cii Honeywell Bull has landed nine orders, total value £13 million, for its DPS 8 Multics information processing systems based on two processors. Over 60 Multics systems are now installed worldwide for technical applications in education, research and defence.

### All-in-1 site

ONE of the first European installations of Digital Equipment's in-1 office automation package will be made at the Bank of Ireland's computer centre. The Ireland's computer centre, the heart of the system is two Vax 11/750 minicomputers linked by DECnet with access via a gateway to the bank's main database stored on an IBM mainframe.

### Indian power

INDIA has come to the UK for a \$750,000 data capture system to be installed at a power station in Rajasthan. The order has gone to Babcock Bristol, a member of the Babcock Industrial and Electrical Products group.

### Battlefield project

THE Army has awarded a £1 million contract to Marconi Avionics for a study of pilotless aircraft as part of the Phoenix battlefield project. A major sub-contractor is Fleet Refuelling with responsibility for overall design, and for the launch and recovery system.

### Four orders

COVENTRY process control specialist OD Systems has received four orders worth £500,000 for its Manco manufacturing systems based on Data General hardware. Manco is a suite of programs that monitors and controls both the production process and customer orders.

## Government told to support IT

By John Kavanagh

GOVERNMENT spending policies should support the UK computing and electronics industry against foreign competition says a former government chief scientist, Sir Julian Maddock.

In a paper on links between civil and defence technology commissioned by the influential National Economic Development Office, Maddock says that without "much national determination" the UK might not survive in the electronics business.

This view supports a NEDO report produced by industry, union and government executives early this year, which said the UK could be out of the information technology business by 1990.

But Maddock does not call for more spending. He argues that the industry can be supported properly if there is a "more deliberate management of the monies that are sure to be spent anyway".

He says purchasing power is split across many government agencies, many of which might be ordering systems independently from the same overseas supplier.

"In aggregate the purchasers could represent a bulk order which would sustain one or more indigenous companies," he says.

Major developments and buying programmes should be made with an eye on the national balance of payments, says Maddock. Specifications which demand big imports of components or systems should be avoided.

Maddock criticises much government buying as unambitious. "Purchasing should be made with a spirit of enterprise, deliberately giving opportunity to new concepts," he says.

But at the same time buyers should make the most of existing products. Buyers must avoid the "compulsive tendency to circumscribe the specifications with purely

parochial requirements and oddities".

This applies especially to the Ministry of Defence, which should be urged — and in some cases ordered — to buy standard systems. And a network of technology brokers should be formed to enable high-technology companies to take advantage of work done in defence industry firms.

Maddock shows the need for such purchasing rules by pointing to what other countries are doing. He notes that the UK's competitors are setting up national plans and points out that in the US the Pentagon alone has a high technology buying power which matches that of the entire UK.

And without national commitment the future looks bleak. "To fail to do this will surely cause this industry of the future to go the way of typewriters, sewing machines, motorcycles, shipbuilding and textiles," is Maddock's message.



MADDOCK... Government support needed — but no extra spending.

## Thorn joins the robot age

By John Kavanagh

A NEW UK force has entered the international robotics market in the form of Thorn EMI. The company has signed a European distribution agreement covering robots from Japan's biggest industrial robot manufacturer, Yaskawa Electric.

It is completing development, production and marketing deals with UK and other companies. And it is working on robot sensor devices in its own laboratories.

"We are anxious to have a UK engineering and technology base in robotics and we are talking to UK organisations with specialist design, applications and production expertise in industrial robots," the company said. "We are starting from nothing but we are looking for a rapid entry into this field."

The move comes at a time when UK industry is being notoriously slow about installing robots. In February the British Robot Association said that even when UK firms accept robots they take a piecemeal approach and go for foreign systems.

## Racal and Rixon settle their feud

By Donald Kennett

RACAL-MILGO and Rixon have settled out of court their dispute over modern patents which began in the mid-1970s in the US.

The dispute started before Racal bought Milgo. Milgo won a court action alleging that Rixon had infringed its patents. But Rixon appealed in a number of different courts in various districts where both companies traded and in some of them it got the decision annulled.

Racal-Milgo appealed against some of those decisions, some of which in turn were reversed and finally this month both companies decided the thing had got out of hand and settled their differences on undisclosed terms.

A separate dispute between Racal-Milgo and Timeplex was settled out of court last month and both parties agreed not to discuss it. The latest started in 1980 when Racal ceased to be the exclusive European distributor for Timeplex statistical multiplexers.

Timeplex set up its own European distribution network and Racal designed its own range of statistical multiplexers, which

Timeplex said at the time misused its trade secrets and breached various agreements.

Timeplex also alleged that Racal broke a supposedly non-cancellable contract to buy \$1 million worth of equipment and failed to pay for other purchases.

In a third case, involving a suit brought and won by the Motorola subsidiary Codex in 1981 and confirmed at the appeal in the High Court last month, Racal has petitioned the House of Lords to be allowed to appeal to the peers, which the High Court has already refused permission for it to do. Codex had alleged an infringement of its patents on a modulation technique for 9,600 bit-per-second modems.

Format Communications last week settled out of court with Standard Telephones & Cables which, it alleged in February 1980, was making copies of the Format ADX 900 telex message switch. Format had claimed damages for infringement of copyright and abuse of confidential information while STC (then ITT) had been making Format's switch under subcontract.

## Informatics sides with Visicorp

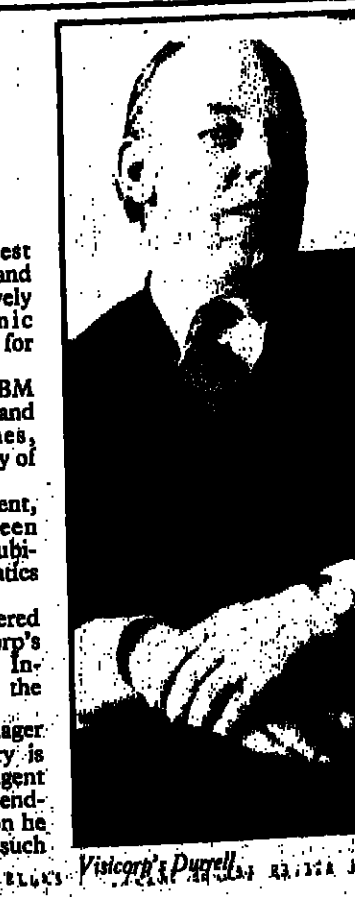
By George Black

INFORMATICS, fifth biggest software house in the world, and Visicorp, authors of the massively popular Visicalc electronic spreadsheet, are joining forces for a major new project.

The aim is to link the new IBM personal computer to IBM and plug-compatible mainframes, allowing end-users access to any of the corporate databases.

"It will be the first intelligent, general-purpose link between mainframes and the coming ubiquitous PC," said Informatics chief executive Walter Bauer.

The two new packages offered by the partnership are Visicorp's VisiAnswer, on the PC, and Informatics' Answer/DB, on the mainframe. Informatics' European manager Ian Durrell said: "The query is handled on the PC as an intelligent terminal and the neophyte end-user can get at any information he wants from all the databases, such as IDMS, IMS or Total."

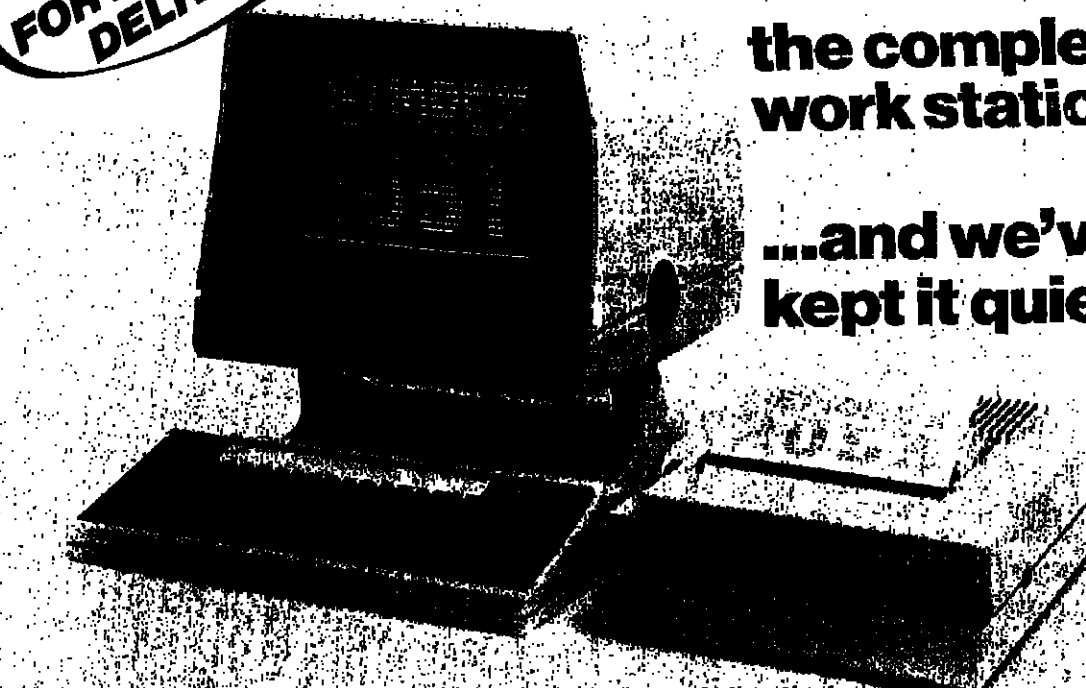


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Vital statistics that are so impressive the competition obviously have trouble measuring up to them

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## GE moves into micro rentals

by Robert Parry  
THE big US industrial group General Electric has moved into microcomputer rental. Its Instrumentation and Computer Service Department, based in Albany, New York, is offering a range of micros to business users nationwide in the US.

Models offered for rental are the IBM Personal Computer, Apples II, IIe and III, and Hewlett-Packard 85 and 86. Rental periods can be from one week to whatever the customer wants, says a GE spokesman. The main aim is small to medium commercial and industrial companies, rather than individuals.

GE's micro rental programme is said to be the first such nationwide general purpose microcomputer scheme in the US, and grew out of its Instrumentation Department's laboratory instrument rental operation. The booming market for personal computers makes expansion into this area attractive.

GE is already heavily into microcomputers through its Geisco bureau operation, which last year bought \$10 million of IBM Personal Computers to sell as terminals into the bureau service, alongside various GE terminals. Geisco is attempting to sell IBM PCs in this way worldwide.



WEMYSS... "Only deal of its kind"

## Wilmot reject makes comeback

by George Black  
CONFUSION over ICL's attempt to deliver an order processing and accounting package to partner its mainframe manufacturing systems has ended with the announcement that Systemsolve will fill the gap with Midas-29.

Midas-29, developed by Computer Software Packages for ICL in Australia, was dropped on recommendations made to managing director Robb Wilmot when he urged a product rationalisation. ICL Australia then reluctantly pulled the plug on the CSP project, settling costs out of court.

CSP, a small but technically advanced software house which had no marketing expertise, decided to carry on its Midas-29 scheme and to compete with Interact, ICL's preferred option.

Early last year the \$6 million Interact plan, being undertaken by Interact of Dallas, Texas, ran into trouble. ICL experts went to the US to see what could be done, but in October co-operation between the two firms broke down. ICL refused to continue and In-

ternat went into receivership. ICL salesmen, poised to deliver the product at last to more than 100 customers worldwide, were instructed to halt all negotiations.

Meanwhile CSP's product had been finished and came out of a three-month evaluation by broken Jardine-Matheson with flying colours. As word began to get around that Midas-29 would do what Interact had failed to deliver, a customer queue developed including GEC, Adidas and Blue Circle. CSP had to look around for an agent to distribute the package and approached Systemsolve of Sunbury-on-Thames.

"We're very pleased to have concluded this deal," said Systemsolve's marketing manager Peter Wemyss, "because it's the only one of its kind and we're sure it will be what users have been asking for."

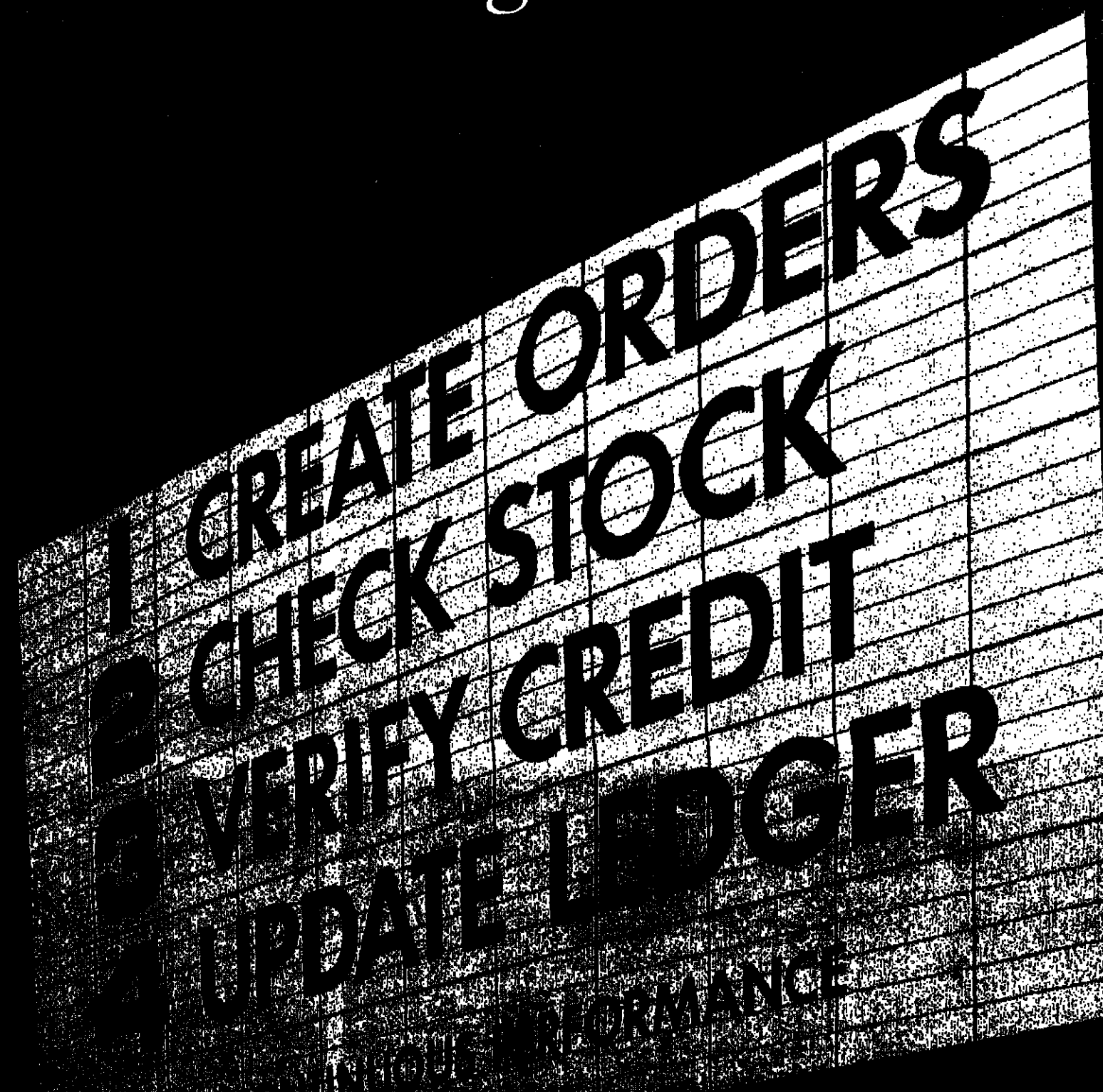
Midas-29, voted last November at an international ICL marketing conference as the best general package available to the company's mainframe users, run on ME29, 2900 and 1900 machines under

TME and DMB operating systems. By the time the DMI is introduced in 1984 Systemsolve plans to have it running under its VME operating system.

Three sales of the package are said to have been made already and Systemsolve is holding talks with a further 30 firms. It has exclusive selling rights for the UK and South Africa and non-exclusive rights for the rest of the world excluding Australia. By special agreement with ICL, Midas-29 users get its database manager IDMS free of charge.

ICL management may well be relieved to have reached its conclusion of the saga. The Interact disaster was preceded by a similar episode in which the German package Ordermaster, originally named Aurax, was dropped after a large capital investment in its development. An attempt by Dataskil to put it back on the rails came to nothing. Later Systemsolve put £600,000 into creating a version for the 296 market, but ICL found the use base too small and the price too high.

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Full details about these courses and grants from The Registrar, Brighton Polytechnic, Moulsecoomb, Brighton BN1 9QJ, Tel: Brighton (0273) 993655

**Brighton Polytechnic**

## IBM joins car giant in datacomms project

by Donald Kennett  
US automotive giant General Motors and IBM are completing the final stages of a factory data communications project.

A broadband local area network is being used in the 2½-year joint project to allow data to pass between production control and data processing computers of different makes.

The work was conducted at a centre staffed by both companies. A set of communications protocols corresponding to five of the seven layers of the International Standards Organisation's Open Systems Interconnection model was developed.

GM has also worked closely with Digital Equipment, whose computers it uses for production control alongside IBM's data processing systems. GM has asked other manufacturers, including Hewlett-Packard, to review the results.

The project, which began in March 1981, may lead to broadband network products, complete with the MAP (Manufacturing Automation Protocol) open systems protocols, being announced by several major computer companies this year.

The work came to light during a study of broadband LAN applications in 50 US companies conducted by California-based market research company Strategic Inc.

The seven-volume \$20,000 study was published in the UK last week by Strategic's European distributor IPI.

According to Strategic president Michael Killen, IBM has five sub-contractors working for it on broadband LAN parts, although it has yet to announce a broadband product. Killen previously thought IBM would launch a broadband product last year, stimulating the market to produce sales of 2,000 networks by the end of the year. Instead the figure was 720.

Killen says that broadband LANs play a bigger part in company networking policies than other types of network and account for the biggest cash flow in the network industry.



JOHNSTON... "In a strong position to enlarge our market"

## BOS/Net extends its empire

by Donald Kennett  
MICROPRODUCTS Software, a now independent offshoot of CAP, has implemented BOS/Net, the network version of its five-year-old business operating system, on the Digital Microsystems DMS-3 and is working on a version for the Logica VTS Vitesse personal computer.

BOS has been implemented on more than 50 machines based on nine different processors including eight- and 16-bit microprocessors, as well as minicomputers. BOS/Net had previously been implemented on three — the UK-made Trivector Triton 4, the Apple II and the Burroughs B20 — and MPSP development director John

Johnston says he expects this version to become more important to the company as people start using individual personal computers on large networks such as Ethernet.

Logica's Vitesse, a 16-bit machine which also runs under CPM-86, has a network interface for the company's Polynet version of the Cambridge Ring — an alternative to Ethernet for office systems. Logica's file server software supports up to 254 users.

Digital Microsystems' Hinet local area network, which is claimed to be the biggest selling vendor-independent network in the world, enables up to 32 users to share files used with MPSP's range of business software.

This includes payroll and ledger programs and specialised systems for groups such as solicitors and estate agents.

BOS/Net costs £750, the same as the earlier non-network but multi-user version of the operating system, while the basic single user BOS costs £250.

Johnston says that the work already done to put its operating software on to many different systems means that each new implementation can now typically be done in about six weeks. "We are in a strong position to enlarge our market as people diversify away from single-user operating systems like CPM on to more multi-user and network systems," he says.

## Clinic offers free advice on micros

by John Riley  
INDUSTRY'S apathy to the government's £85 million Microprocessor Applications Project could be cracked with a microprocessor clinic which gives individual rather than group consultation. That is the view of David Noaks, chairman of the University of Birmingham Microprocessor Group, who is trying to set up such a clinic.

Noaks has approached the Department of Industry to help with

the funding, and it has agreed to cover 50% of the clinic's costs for two years (the other 50% to be found from local sources) if it can be demonstrated that sufficient demand for the facility exists by local business.

"The programme of course teaching, encouraged by the DoI and undertaken by all higher education establishments, may well succeed in the long term, but in the short term there is a gap to be

bridged between an employee attending a course and the employee immediately being able to adapt the course material to his own company's requirements," said Noaks.

The microprocessor clinic aims to offer free advice about the use of microprocessors, comment on proposed designs, and help individuals design and test systems. Noaks also plans regular "up-dating" meetings.



# The Pick micro race is underway

by Claire Gooding and George Black

THE rush is on to get the Pick microcomputer operating system on the lucrative micro market before Unix and other rivals. Pick's appeal is being broadened with IBM versions from the personal computer up to the 4300 series.

And this week Birmingham bureau Fletcher Computer Services announced it had acquired rights to a Pick code generator which could boost the operating system's popularity still further. Called The Programmer System (TPS), it was written by Michael Jones of The Software Group, in Denver, Colorado.

"With tools like this Pick is certain to be the winner in the micro race," said Fletcher's managing director John Davis.

His firm will be marketing it on its own and as an optional extra to the ADDS Mentor machine running under Pick.

It may take a year or more to put

Pick on the IBM PC but suppliers do not want to wait that long. An alternative they are seizing on is Revelation, from Cosmos in Washington, which does not use the same source code as the original but is fully compatible with it and is described by experts as identical. Revelation will be sold in Britain by IDM of Doncaster.

The originator Richard Pick is said to be considering legal action against Revelation's authors for copying his system, but experts think his chances slim, since US copyright law is still fuzzy on re-implementations.

Pick will head the team putting his system on the IBM-PC, an international convention at Lake Tahoe, on the Nevada-California border, heard last week. Bids for Revelation have been made by System Management, which deals with Pick on IBM's Series 1, and CDI, which is attempting to win world rights to the lookalike.

Revelation's main attraction is

that it could open up the myriad of tools and applications that already exist for Pick. On the IBM-PC, users of the standard Microsoft operating system PC-DOS will be able to switch to Pick applications.

Pick will also be a mainframe choice. A version is up and running in native mode on an IBM 4300 at Pick's computer works. It would probably be released running together with IBM's VM system to gain the widest market. Pick Systems is putting \$1.1 million into implementation over the next five years.

Booming interest was evident at the Lake Tahoe conference which attracted over 1,000 delegates from all over the world, compared to about 100 last year. Manufacturers there included Ultimate, Microdata, Altos, Prime, General Automation, DEC, ADDS, Data-media and Evolution.

The operating system has won a high reputation on minis such as the CMC-Microdata Reality and



DAVIS... "Pick is certain to be the winner."

the Honeywell Level 6-based Ultimate. It was recently put on IBM's Series 1 to boost sales.

IBM is not backing the rush for Pick on its micros and minis, but if the momentum continues Pick

could challenge Unix, which has also been waiting for its chance for around a decade.

Pick's fans say it is better suited to commercial use than Unix, which came from academia.

## Logica lines up OEM deals for Rapport

LOGICA is set to sign a number of OEM agreements for the promotion of its relational database management system Rapport.

In the past the major UK software firm has always marketed the product itself, but a recent contract with Ferranti is just the first of a planned series of deals in collaboration with hardware manufacturers and systems houses.

Logica's database expert Colin Banfield said Rapport was to be offered on Ferranti's Argus 700 machines at prices from £25,000 up. And several more such agreements were likely to be announced starting in June.

"We're looking not only for manufacturers to take on the product to enhance their machines but for customers who will be building systems with Rapport embedded in them," said Banfield.

Two suppliers to the oil industry were said to be interested in making this type of arrangement with Logica.

Ferranti users will be able to set up a DBMS for ad hoc queries, which is hoped to be attractive to clients in research and scientific establishments.

## Staff quit Software AG

FOR the second time in a year Software AG of Reston, Virginia, has lost its chief financial officer and chief operating officer.

After a policy clash with chief executive officer and president John Maguire, former executive vice-president and technical expert Bruce Smith and former chief financial officer Lloyd Brubaker have quit.

And they had replaced Kenneth Bardin and John Okulski less than a year ago.

The trouble is thought to stem from poor financial results since the company went public in 1981. Software AG, which has its European base at Darmstadt in West Germany, markets the Adabas database system through worldwide branches.

Its UK headquarters, with around a dozen staff, are in Derby, and its British customers have included Prudential Assurance and Allied Breweries.

The company was the developer of the Con-plex teleprocessing monitor and the Natural high-level language. Maguire who has admitted that there is concern among both customers and investors plans to make a statement at the company conference in New Orleans in June.

## Micro database

A DATABASE management system for Teletype micros is being introduced by its Derby distributor Midletron.

TeleDBMS, which runs on single-user systems and networks of up to 16 workstations, is menu-driven and generates CP/M-compatible program.

Known as Optimum in the US it is available in the 8-bit version now and will be coming in 16-bit form later this year.

## Hotel systems

HOTEL management systems developed by ABC Business Systems of Kent and Keel Data Systems of Devon are to be marketed by Andover software house Tabs.

And Tabs has teamed up with Japanese cash register maker Canon to link their machines to its micro accounting packages through an RS232 interface. The system is due for launch in September.

## Spectrums are nearly ready for Prestel

FINISHING touches are being put to the software system that will put Prestel within reach of 120,000 Sinclair Spectrum micro owners.

The work has been contracted out to BP subsidiary Scicon by Micronet 800, the consortium which aims to convert micros into videotext terminals.

The project involves adapting the BBC Micro, the Commodore Pet, Tandys 1 and 3, among others.

As soon as the Spectrum software is complete, Scicon's team is moving on to tackle conversion of the Dragon.

Micronet, which consists of Prestel, the Industry Department and East Midlands Allied Press, has set up a marketing subsidiary known as Prism to sell the interfaces for a range of micros.

Up to now the Prestel service has found only 20,000 customers, so the link to a rapidly expanding market of home computer fanatics could be the boost it has been seeking.

As the Spectrum-Prestel link is to be marketed at only about £34 from May 1, it seems the strategy is that of the loss-leader to try to put Prestel firmly on the map.

Head of Scicon's engineering laboratory Roger Blakeway said the programming for converting



the Spectrum has not been particularly easy.

"We've been making the machine do things they were never intended to do," he said.

"For instance, we've convinced the machine that it ought to have 40 columns instead of 32 and it now prints out in 40 columns too."

Most of the coding has been done in Assembler, with some Basic.

Micronet 800 is now predicting 100,000 users within three years. It bases its hopes on a positive response by 700 BBC micro owners out of 1,500 who replied to an advertisement.

"Word is spreading about this idea. People are impressed with what you can now get for your money."

"There will be a lot of free programs available, as well as others that can be bought. And electronic mail facilities are being incorporated," said Blakeway.

In the autumn Business Micronet is expected to add a number of more popular commercial software systems to the present set of domestic products. The packages are being developed by the National Computing Centre (NCC).

## SAS statistical system goes portable for a wider audience

by Donald Kennett

A SYSTEM that has been used for such diverse applications as analysing Londoners' attitudes to policemen and analysing survey data from an African soda ash lake is available in a portable version.

The system is the SAS high-level programming language and statistical analysis system from the US-based software house SAS Institute.

Versions of the system, which was previously designed to run only under IBM operating systems, are to be available later this year to run under VMS on Digital Equipment's VAX, under AOS/V on Data General's MV series and under Primos on Prime's 50 series minicomputers.

The announcement was made at the first meeting of the European user group, SEUGI, in London last week - along with announcements of several supporting products.

SAS combines a high-level programming language originally designed for statistical analysis with facilities for data management, report writing and automated graphics output in a library of 75 procedures.

The supporting products announced last week include an interactive financial spreadsheet, FSCalc, a set of procedures designed for operations research, SAS/OR, and a set of device drivers for the SAS/Graph graphics product which enable

graphics output to be sent to an IBM Personal Computer, a Xerox 6500 with a laser printer, an Apple and a couple of protocol converters.

The company expects to take more than 500 orders for Portable SAS by the end of the year. So far it has 3,500 users of the IBM version on a total of 5,400 sites, with European users numbering 350.

The 240 users from 16 countries that came to the London meeting heard 31 papers from fellow users who described applications including computer and operating system performance evaluation at Royal Bank of Scotland, Lloyds General Accident and Harwell Atomic Research Establishment, and machine capacity planning at Datasolve and BGS Systems, which also used links to its own data extraction and performance prediction software products.

Imperial College has used SAS to analyse attitudes to neighbourhood policing in London. ICI used it to analyse survey data from a soda ash lake in East Africa and the German company ISS has analysed responses to advertising with the software.

Enquiry systems and user friendly front-ends for SAS were implemented at General Motors, Celco, Bank of Israel and Reckitt & Colman. And Rolls-Royce used it as a programming language for end users, as well as for prototyping.

Rick Langston, from the SAS

Institute applications division in the US, said that the company was investigating implementations of Portable SAS for personal computers, based on the Motorola 68000 and National Semiconductor NS16000 processor chips. Implementation was possible on any microcomputer with a PL/I compiler and virtual storage, he said.

He explained that the main task in producing the portable version has been to rewrite the code, half of which had originally been written in IBM Assembler, in PL/I. Then they had to write compilers, procedure interfaces, word scanning routines and input-output processors for each machine it was implemented on. Even the parts that were already in PL/I had to be rewritten into an ANSI subset of IBM's PL/I.

SAS originated as a PhD project by a small group of statisticians at North Carolina State University in 1966. In 1967 they had sold 350 systems and the University told them to get off the campus and go commercial. Turnover reached \$4.5 million in 1980 and the 1982 figure was expected to be \$18 million.

The UK division opened in 1980 and was expected to show a \$2 million turnover for 1982, generated from 60 users.

The company's growth is reflected in its user group attendance figures, which grew from 180 at the 1976 meeting in Florida to 1,600 this year in New Orleans.

## Harwell's ship package sails round the world

A SHIPPING package developed at the UK Atomic Energy Authority's Harwell Laboratory is being sold around the world. It has cost £500,000 to develop since the early 1970s and now Harwell is trying to sell it to more than 40 fleets.

The Finnish company Neste Oy has just signed a contract for the software system, which has been upgraded with an interactive front-end data manager.

Since 1966 Harwell has been developing software packages, doing computer research on a consultancy basis and carrying out large bespoke projects for industry and government. The fleet scheduling

and planning package was begun with government money for the UK Seabridge consortium.

When the government had been paid back, the laboratory carried on developing the product. It has since been sold to the Norwegian firm of Lief Hoegh and Klavens Chartering.

The software has been based on IBM mainframes and plug-compatibles, but commercial manager Lionel Cousins said he had high hopes for selling it for use on the DEC Vax minicomputer range.

It is to be demonstrated at a major shipping conference in Oslo, Norway, in June.

Software File is compiled by George Black

Introducing Hyperion - the world's most powerful portable computer. Weighing in at less than 20lbs. The new star which makes other personal business computers seem small-minded. Or heavy footed. The petite Hyperion is biggest in performance, with 256kb memory (four times what most competitors offer). Truly, for the first time, a whole business can be carried in a small case. Naturally, the Hyperion is IBM-pc compatible - and it's cheaper. It also runs the MSDOS and BOS operating systems - so you can interchange disks and data. And it offers an extra the IBM doesn't - a RAM disk. Unlike other portables, the Hyperion displays star quality on a large seven inch screen - with crisp, clear presentation. And it looks the part - so stylish, yet unobtrusive on the desk. The Hyperion. What it takes to be a star. For more information just fill in the coupon below and send to Gulfstream Technology Limited Unit 3A, Tunnel Estate, 726 London Rd, West Thurrock, Grays, Essex RM16 1LS Telephone: (04026) 4926 Telex: 894222 Gulfs

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Harwell is trying to sell its shipping package to more than 40 fleets.



# Semiconductors are set to soar

by Robert Parry  
THE semiconductor industry, plagued by the worldwide recession of the past three years, is starting to sound optimistic again.

Intel has just reported first quarter earnings of \$12.5 million, more than double its \$5.4 million for the same quarter last year, and is seeing a continuing gradual climb in demand.

National Semiconductor, too, reckons that semiconductor component and system demand is increasing, though the components sector continues to be affected by pricing and margin pressures.

"We are seeing genuine improvement in semiconductor orders," says NatSemi president Charles Spork. "And we're presently experiencing the strongest

order rates in more than two years for our components, the company's largest business segment."

But NatSemi's third quarter results show a continuing loss. Despite sales up nearly 10% over last year to \$262 million, losses rose to \$18.5 million. The same quarter last year showed a net loss of \$8.8 million. And \$9 million of this year's loss related to the shut down of NatSemi's medium systems computer manufacturing in San Diego.

At Intel the hike in earnings came on sales also up around 10%. The 1983 first quarter revenues were \$238 million against 1982's \$207 million. This puts the revenue level at much the same as the last quarter of 1982. According

to Intel chairman Gordon Moore a large part of the rise in income came from cost cutting measures and higher investment income.

The cash investment came from Intel's sale of 12% of its share to IBM which brought in \$250 million. Savings came from the 10% pay cut at the beginning of the year, which has now been relaxed to a 5% cut.

Both Intel and NatSemi expect the present improvement in orders to continue.

"The remainder of 1983 should be a year of gradual improvement," says NatSemi's Spork, "and I anticipate that by this time next year the industry will be experiencing a strong year, based on a continuation of today's more favourable signs."



SPORK... "We are seeing genuine improvement in orders."

## Survey predicts huge growth for CAD

THIS latest forecast of massive growth in computer aided design (CAD) has come from Strategic Inc.\* The market for CAD engineering workstations for applications like design of integrated circuits will grow at an average rate of 81% a year until at least 1987, Strategic says.

With computer power to cost ratio increasing further, there will be more emphasis on standalone workstations capable of linking into larger computers for access to databases holding details of materials used in the design.

The key to success in the market, suggests the report, will be in fitting useful applications software into these stations, particularly in

making libraries of commonly used routines. Software will be vital in encouraging use of custom made integrated circuits.

But the largest sector of the market will continue to be integrated CAD workstations with full applications support.

The report notes that opportunities will exist for software developers of tailored systems for large companies with their own design groups for integrated circuits.

\*Impact of New CAD tools on the IC industry published by Strategic Incorporated, available for \$1,330 from IPI, Nordre Ringvej 201, 2600 Glostrup-Copenhagen, Denmark. Telephone 45 263 20 44.

## Micro boom helps storage

by Philip Hunter  
SOARING on the back of the microcomputer boom are the makers of mass storage, with bullish predictions of vast increases in turnover floating in the air.

One of the largest UK mass storage makers, Independent Computer Engineering (Ice) has forecast a four-fold increase of turnover from £24 million in 1982 to between £8 and £10 million.

The company bases the predictions on a clutch of huge orders, including a recent £2 million bonanza from West Germany.

But corporate planner Paul Griffin denies that the forecast is made just by adding up the value of contracts. "I interpret contracts in a conservative way," he says. He reckons only with money expected

to reside on the table.

There is hard evidence of growth, as the company has expanded its central offices in Ashford, Middlesex by 12,500 square feet to bring management, production, development and marketing under a single roof.

This expansion has in part been financed by £250,000 investment from the Electra Risk Capital, a fund set up to sink money in young companies. The fund has also recently invested in American Monitors.

Griffin says that Ice has also set aside some of the Electra cash for developing a new range of products based on a 3 1/2 inch Winchester disk subsystem.

But the next announcement expected this June is for a

multiplexer to allow a wide range of microcomputers to be linked together to share peripherals such as printers, and also storage.

Ice already has a multiplexer that will allow up to 64 Apple microcomputers to hook up together to share resources.

But the products that have been making Ice all the money are disc subsystems for most of the leading micros.

They offer between five and 40 Mbytes storage, with the option of being able to transfer data to a moveable cartridge for security.

Griffin says Ice will go public, probably on the Unlisted Securities market popular with young high tech companies, when the market comes to its senses.

## Arab millions help Quest research

THE injection by Arab investors of £2 million into Quest Automation's computer aided design business should ensure continued long term funding in research and development.

Quest CAE, which was split off from the parent Quest Automation in return for the funding, will use the money to increase its capitalisation. That, says managing director Tony Ebel, will allow Quest CAE to go forward in its program of increasing R&D and turnover.

If Quest CAE is successful in its efforts, the Arab backers would be looking to put in further sizeable sums. The arrangements announced in January by which the Arab Research and Development Trust, through two UK companies it owns, took a 51% share in Quest CAE, has been approved by Quest plc shareholders.

Ebel says it was essential that it received the injection of funds to ensure that Quest CAE could profit from the "enormous opportunities" in computer aided design over the next decade. "It is a positive partnership for the future," he says.

A report in our March 17 issue that the £2 million and already been spent was well off the mark. Ebel said. Quest had spent £1.3 million in its last financial year, but "we have not gone on an incredible spending spree with the new money."

## Navy contract

REFERENCE in a March 24 article in Computer News to a £2.5 million contract to build a war simulator for the Greek Navy was correctly stated that it was a joint contract between Systems Designers International and Submarine Electronic Group, SDI was a sub-contractor in the contract, which has been completed and not just obtained.

## SHARES TABLE

The shares table, which is specially compiled for Computer Weekly, shows selected computer companies that reflect the state of the computer industry.

Selected Computer Companies (Units) (See the State of the Computer Industry)									
Date 10/4/82		Index 134.81				Change +1.8			
Price	London Stock Exchange	Price	Change	Price	Change	Price	Change	Price	Change
1983									
High	Low	Stock	Price	Change	1983	Stock	Price	Change	
496	340	ACT (Amp Data) (25p)	488	+20	431/2	30 1/4	Amdahl	276	+20
182	104	BCC (Bullitt) (25p)	110	+8	101	10 1/4	Apple Inc	102	+10
176	84	E. Bow Mar (25p)	71	+12	38	38	Autodesk	102	+10
167	84	Chubb (25p)	101	+12	38	38	Autovision	102	+10
178	128	CIA (Crest) (25p)	181	+18	16	11 1/4	Cam Corp	102	+10
154	84	Chubb (25p)	101	+12	38	38	Com Data	102	+10
915	516	Del Mar (25p)	600	+43	12	10 1/4	Com Data	102	+10
905	516	Del Mar (25p)	600	+43	12	10 1/4	Com Data	102	+10
847	411	Del Mar (25p)	600	+43	12	10 1/4	Com Data	102	+10
847	411	Del Mar (25p)	600	+43	12	10 1/4	Com Data	102	+10
847	411	Del Mar (25p)	600	+43	12	10 1/4	Com Data	102	+10
847	411	Del Mar (25p)	600	+43	12	10 1/4	Com Data	102	+10
847	411	Del Mar (25p)	600	+43	12	10 1/4	Com Data	102	+10
847	411	Del Mar (25p)	600	+43	12	10 1/4	Com Data	102	+10
847	411	Del Mar (25p)	600	+43	12	10 1/4	Com Data	102	+10
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# Nixdorf plans to double its UK staff this year

by Kevin Cahill

HANOVER Fair had some good news for UK employment with Heinz Nixdorf's announcement that his company would double its UK staff to nearly 600 this year.

Nixdorf's business is expanding rapidly in the UK, he said, and he hopes to follow the £15 million Midland Bank terminal order with sales to at least two major building societies.

Speaking at the first major Press conference of the 1983 Hanover Fair, Nixdorf, chairman and founder of what is now Europe's fourth largest computer company, described 1982 as a "very mixed bag".

But there has been a sparkling start to the first quarter of 1983. First quarter orders are up 30% on last year, led by the company's IBM compatible 8890 product.

The company increased its payroll by 1,300 people during the year, maintaining a trend begun in 1976 of adding about 100 people a month. Nixdorf said the company now had 16,000 employees and would continue to create employment at last year's rate.

During 1982 Nixdorf added around 80,000 sq metres of new marketing and production capacity. This would enable Nixdorf to increase the "own built" component of its products, as well as meeting increased demand for the products. In 1982 Nixdorf introduced the 8890, which is a fully IBM compatible medium sized miniframework designed by the Israeli company Elbit in which US based CDC now has a 30% stake. Elbit has a development contract to con-

tinue work on the machine for the next several years, but increasingly, Nixdorf is taking over the actual manufacture of the product.

Heinz Nixdorf said that his company was attacking IBM head on. "We want IBM's customers, and to get them we have to be compatible," he said.

Nixdorf continued to reject emphatically the idea that the company would go further into the IBM marketplace, with either lower end machines or upwards to a top end mainframe. Like ICL, though with considerably more success, Nixdorf has moved into the communications end of the business and is now installing PABXs at the rate of one a day with a one-day turnaround on the installation itself.

In the US Nixdorf has finally broken into both profit and positive cash flow, according to finance director Klaus Luft. With an

American payroll of 1,700 people and turnover of £100 million, roughly one sixth of the company's revenues now come from the US and it is in the US that the company has had particular success with its 8800.

Luft also revealed that Nixdorf was developing a super micro to run expert systems, and the company was actually demonstrating the first of its expert system offerings called Auto at the Hanover Fair.

Luft was careful to emphasise that Nixdorf had no current intention of going down market and supplying personal micros. According to Luft the personal micro would eventually be the centre of an information publishing, banking and shopping terminal in the home, but until that event was closer to reality Nixdorf would not be going into battle with the likes of Apple and Commodore.



NIXDORF... Last year was a "very mixed bag" for his company.

## Fair emphasis on small business microcomputers

by John Riley  
COMPATIBILITY and integration of computer systems were the keywords at Europe's largest trade fair at Hanover which ends tomorrow. There was particularly heavy activity in the small business microcomputer and integrated office system markets.

The fair has 10 separate exhibitions with about 6,000 exhibitors, and is on track to beating last year's record attendance of 600,000 visitors. The two largest exhibitions at Hanover are the World Centre for Office and Data Technology (CeBit, with over 1,000 exhibitors) and the World Market in Electrical Engineering and Electronics (1,700 exhibitors). About one quarter of the exhibitors in each of these two computer-related exhibitions are from outside Germany, and include 39 British exhibitors in CeBit and 65 in the Electronics and Engineering exhibition. One-third of the British exhibitors came at reduced rates through several trade organisations in conjunction with the British Overseas Trade Board.

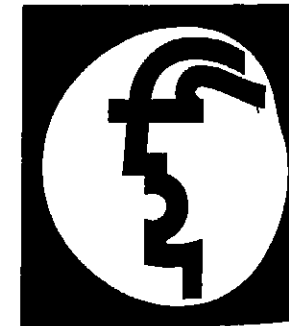
However, according to a BOTB official, the British presence is disappointing, with many British companies not being able to afford to take part. On the other hand, several German companies are hoping to increase their export drive to Britain, and several exhibiting British regional offices have attracted a considerable number of enquiries.

Many of the products launched at Hanover already made their debut in the UK during the winter. The products have been modified for the German language and, being released together, are drawing significant visitor attention.

The European small and medium-sized business market is being wooed by over 200 companies exhibiting microcomputers, and a large number of office system manufacturers. Personal computers for small business use are being highlighted, with several manufacturers actively looking for distributors for their new products.

US company Corona Data Systems gave its IBM clone a first viewing in Europe. It is on show next to an IBM PC to demonstrate the interchangeability of hard discs.

Many of the products launched



had CP/M and MS-DOS operating systems, and software compatibility and availability was stressed by vendors.

The two giant German companies, Nixdorf and Siemens, have both confirmed their intention to intensify their export effort to other parts of Europe. Both companies launched a batch of new products. Siemens launched a 16-bit personal computer, the PC16-10 with 128 Kbyte RAM and a CP/M 86 operating system, as well as new COS software to integrate its office system.

The COS software allows Siemens to link its 6000 series of office systems to the IBM 370. Siemens' drive towards integration is reflected in a reorganisation of company subdivisions into one unit.

Nixdorf has highlighted the integration of new telecommunications services, such as videotelex and teletex, into its office system. It also presented its full range of computers, several of which were announced earlier this year.

IBM had no surprises. It showed its System 38 enhancements and its new IBM 4230 electrical erosion technology printer.

ICL Germany is showing the new personal computer and business systems together with software packages in the order processing and production control areas aimed at medium sized businesses. According to a spokesman ICL hopes to get a better handle on the hardware market by producing good software.

Since launching the original personal computer in Hanover last year, ICL has only sold about 10 in Germany to date. Sales of the PC are only just in double figures. ICL Germany attributes this poor showing to a lack of sales staff.

## Japanese micros steal the show

by Kevin Cahill

THE Japanese, like any vendor still new to the marketplace, managed once more to steal the Hanover show with the variety and sophistication of their products.

Steering neatly into the hottest of stand topics among the exhibition's micro vendors - that is, who, when and for how much would a real 32-bit micro be introduced - Sord president Takayoshi Shiina said it would be his company, and it would be in September.

As to price and type, Shiina would only say that anyone could introduce a naked 32-bit micro, now. "That is not enough," he continued. "The technology is very deficient. We will need things like cache memory and a new operating system."

According to Shiina, Sord's September announcement of the 32-bit machine, which the company

has been working on since early 1982, will comprise five models.

Meanwhile Sord announced a cassette upgrade of just £200, which will convert Sord's existing 8-bit M23 micro to a 16-bit MDOS and M PC compatible micro.

In addition Sord indicated that a dual 8/16-bit machine will be announced shortly, probably at the CC in America next month.

Continuing the strategy of attempting to become the world's first micro maker to offer a full systems capability, Shiina announced a \$1,000 local area network which will link Sord and any other micro to each other. The S Net, as it is called, will be RS232C-based and have a speed of one megabit per second. The maximum length of the network, including boosters, will be 1km.

Not to be outdone, Sord's main rival in the Japanese micro market, NEC, demonstrated a fibre optic

network for personal computers.

While NEC executives on the stand insisted that the network is not for sale in Europe, the demonstration was on a fully constituted PC 8000 configuration of four micros, two disc units and several printers.

The network, called Netbranch 4800, is available in Japan at a local price of 300,000 yen (about £800) and NEC is expected to make a major push with the PC8000 personal micro range in the UK and Europe later this year.

In the home marketplace in Japan which last year absorbed 600,000 personal computers, NEC moved its market share from 28.9% in 1981, to 35.1% in 1982, narrowing Sord's share of the market from 17.8% in 1981 to 13.1% last year.

Despite the drop in market share, Sord still put on growth of over 50% according to Shiina.



The IR 16045, one of a range of German robots which made an impact at Hanover Fair.

## Robots are put through their paces

by John Riley  
LARGE industrial robots were the most striking equipment at Hanover Fair. German exhibits were dominant, but several foreign companies demonstrated their lighter and smaller machines.

With Germany having the largest robot population in Europe - currently about 3,500 - some foreign companies stressed their microprocessor-based controllers. IBM demonstrated its commitment to robotic technology with the RS1, a programmable, multi-functional manipulator with six degrees of freedom. It is designed for light assembly, testing and materials handling, with its sophisticated controller programmed in IBM's own AML (A Manufacturing Language). IBM also demonstrated its Sankyo Seki manufactured 7535 light robot being controlled by an IBM Personal Computer.

A handful of Japanese machines were on show, and two Japanese companies occupied stands. One of these companies, Pentel, which makes light, four-axis assembly robots, made its debut in Europe and was looking for distributors. Its main application is in injection moulding, and a feature highlighted at the exhibition was its PR2000 control system using Pentel's own robot language, which has 10Kbytes ROM and 2Kbytes RAM.

The other Japanese company was Hirata, whose AR H300 and AR H450 are used in television manufacturing both in the UK and in Germany. The Hitachi series of robots were demonstrated by German distributors Zeppelin.

The importance of the exhibition was not so much in novelty, but in the opportunity to view a comprehensive range of robots being put through their paces. These included large machines by Kuka, Asea, Volkswagen, GDA Amec, and others, and smaller ones from various companies including the American Unimation and the British Pendar company.

Kuka, the German manufacturer of large robots for the car industry, presented the first of its IR100 series which can be mounted on the floor, overhead or on walls, used mainly for machining, manipulation and welding. The largest machine, the IR 662/80, was demonstrated mounting car wheels with the aid of an external television position sensor which signals the hub hole pattern to the robot controller. The RC20/40 controller which comprises six transistor amplifiers was developed in a joint Siemens and Kuka programme.

The leading Swedish robot manufacturer ASEA demonstrated its series of heavy robots, and introduced a new spot welding robot, the IRB90S/2, with a modified control system to cut programming time by 25%.

Only one British company attended the fair, the Welsh robot manufacturer Pendar, which shared a stand with the Borough of Gwent to promote Wales. It showed its lightweight pneumatic driven Placemat 5 which is freely programmable in space, and which has three degrees of freedom.

Many of the exhibits at Hanover will be taking part in the Automata Robotics Exhibition in Birmingham this May.

## IBM nine months late with German Prestel

by Kevin Cahill

IBM Germany admitted last week that it would be at least nine months late delivering BTX, the German version of Prestel.

According to a spokesman the company could not deliver the system this September because "a lot of tests had to be carried out to make sure no one hangs up because they are not familiar with the system."

IBM won the contract against stiff competition from General Electric and from Siemens on a fixed price basis.

The IBM spokesman admitted that the company could lose money on the DM50 million project.

Most German commentators greeted the explanation with accompanied the formal announcement with considerable scepticism, having known for months that IBM was experiencing difficulties which it refused to acknowledge publicly.



SHIINA... "We will need a new operating system."

## TRW has the Advantage.

A company called TRW and North Star, a leading producer of desktop computers, have formed an unbeatable alliance.

As a world marketing organization for high technology products, TRW Datacom helps shape the future by building distribution channels for the best systems from the best sources. Now we're putting the full strength of our experience worldwide behind North Star ADVANTAGE and HORIZON systems.

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## PROFILE

# Life's a lottery for this software boss

MIKE SHONE is a gambler. And as managing director of Software Sciences, he has to take his gambling pretty seriously because there are 500 jobs apart from his own resting on the outcome.

"On every fixed price contract you are gambling the company," he says. "There is the risk the system won't do what you claim it does and so you can get sued. And there is the greater risk that you haven't budgeted correctly."

Hesides, lives depend on the proper working of the systems in many cases. "If our police system doesn't work there's some poor mugging victim lying on the pavement waiting for help, and it's our fault."

So Shone is interested only in carefully calculated risks.

"We want to know exactly what is expected of us before we agree to anything. A fixed price for a definite spec - that's what we have to get."

Having studied maths at Liverpool University, Shone is well up on handling figures and calculating probabilities.

"If I lose £100,000 on a job, I get adverse comment. If I'm £250,000 out, I get a rocket. Probably if I'm a million out I get fired, I don't know. It hasn't happened, obviously, otherwise I wouldn't be here."

From university he chose, out of a number of offers, to go to English Electric, which he thinks was a good decision.

"It was a good organisation and thought big. In those days people didn't say, can we do it, should we do it; they just said, yes, we'll do it, it doesn't matter what the job is. We'll do it and this is what it will cost you."

Concorde is a case history he dwells on - maybe because he uses the plane to put in an appearance with his salesmen on the more important, seven-figure jobs.

"The moral of Concorde is not

that we put a lot of money into something which didn't work out, but that we didn't go on putting money into it until we had the best in the world," he argues. "If we had made a Concorde-2 and a Concorde-3 then we would have mined up all the opposition."

The same applies in the software world, he says. "We can be world leaders, we will be world leaders if we only have confidence in ourselves."

"We have better technology than the Americans and we've got to believe in it. We've got to intend to do something and then do it, not get knotted up in a lot of committee meetings."

For the year 1983-4 he had a budget of £2.5 million for capital expenditure and £1 million for development time, so it sounds as though he is about to practice what he preaches.

Shone became a manager at the age of 26 as head of English Electric's consulting services department, including data processing.

In 1970 he was recruited by Colin Southgate to become technical director of the newly-formed Software Sciences.

"Colin and Bill Ellis are both gamblers too, so I was in the right company."

Software houses were a recent invention in Britain at that time. Logics and SPL had been in existence only a couple of years.

Shone has always used Logics as a yardstick for that reason. "I use them for a comparison because they are good - not many people admit that about their competitors, do they?"

The growth of turnkey systems was unforeseen. Shone thought the job of a software house was to provide consultancy first and back it up with programs where necessary. But in 1974 all that changed and the firm jumped at the chance to take risks with fixed-price



SHONE... Interested only in carefully calculated risks.

contracts. Others were more wary, he said. CAP had only decided to join in the game a couple of years ago.

"We like risk and are prepared not always to make a profit - provided we can do so often enough."

One of the difficulties was that hardware makers often did not know the capabilities of their own gear, especially in unusual conditions. For instance, what would be the response time under a certain loading? And if as many as nine makers were supplying parts of a system the risks were multiplied.

Shone is a Tandem enthusiast. "We use their kit most frequently after DEC's because so much of our work needs resilience. There are going to be a lot of people trying to get into Tandem's market in the near future - wait and see."

Growth and success have brought a new set of problems for Software Sciences management. "When we were 100 we could still all get into a room if we needed to. Now it can't be done so I have to travel around the country

contracting. Others were more wary, he said. CAP had only decided to join in the game a couple of years ago.

contracting. Others were more wary, he said. CAP had only decided to join in the game a couple of years ago.

## PLATFORM

Derek Evans is chief executive of Mercury Communications.

## Why should telecomms be immune to all competition?

LIBERALISATION is a major issue in telecommunications policy, and has led to a great deal of debate in the UK and overseas. But it is not clear why it should have aroused so much heat.

For the vast majority of goods and services we accept competition as the natural state of affairs and the best means of encouraging efficient use of resources. Why should telecommunications be different? Instead of assuming that monopoly is the natural state and that every act of liberalisation is a concession or distortion of the market, why not start from the other end of the argument and assume that competition makes sense except if it can be shown that monopoly is inevitable? All the more important because telecomms is so vital in the information technology revolution.

Telecomms is, of course, different in that we need one or more viable national networks and competition needs to be consistent with preserving the integrity and safety of these networks. But this is an argument for regulation, not for monopoly. In my view, discussions should therefore concentrate not on whether competition is a good thing - because the market will judge that - but on getting the regulatory framework right.

Any debate on liberalisation needs to recognise that it is a moveable feast. Once started, the process of liberalisation cannot be artificially frozen in mid-stream.

There is evidence of this in the pace of events during the relatively short period between publication of the Telecommunications Bill in November, and the Report stage of the Bill at the end of March. Significant milestones have been

reached. The Bill has been passed by the House of Commons, followed by extensive discussion: the cellular radio licence decision: BT licence proposals: and the Little-

chill report, with its far-reaching recommendations on such matters as the prime instrument policy, resale and, of particular interest to Mercury, international liberalisation.

These are important steps. A much remains to be done. The Telecommunications Bill itself, a number of loose ends, but some key issues are not clear. Much depends on the contents of the Bill, on which the present proposals need considerable tightening in order to ensure that anti-competitive practices are effectively prevented; and the ability and strength of character of the Director-General of Telecommunications, whose identity we are eager to know.

Apart from the identity of the DGT, we are not yet clear whether the Office of Telecommunications will have sufficient number of staff and professional expertise to do its job effectively.

That is the regulatory progress towards liberalisation. Change in attitude are every bit as important. Although we are already seeing the beneficial effects of the stimulus of competition, there can still be difficulties in convincing users of the benefits of liberalisation.

The other central issue in liberalisation must be discussed in political. I must draw the clearest possible distinction between liberalisation of telecommunications, which can be expected to bring wide-ranging benefits, and the privatisation of BT, which is totally separate issue on which it is not appropriate for me to comment. Nobody, whatever their political affiliation or established interest, need fear liberalisation. It is essentially a response to a market growing at an explosive rate, in which there is more than enough opportunity for everybody.

Derek Evans



# ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, April 21, 1983

## The court case DEC can't win

DIGITAL Equipment and the small UK systems house Darkcrest are today going to the High Court to fight out a lawsuit which probably neither company wants. As a small firm Darkcrest does not want the legal costs. And DEC know that whatever the outcome it cannot win in the long term.

DEC is accusing Darkcrest of pirating system software. Darkcrest denies the charge and says its reputation could suffer because DEC has been slow about following up its claims in the court. Darkcrest also believes this is a test case: if DEC wins it will pursue similar claims against other systems houses. The case is seen as part of DEC's aggressive new approach, an approach aimed at giving it a bigger slice of the end user market.

If the case goes in DEC's favour the company can justifiably say it is simply protecting its software ownership rights. But it could quickly start to lose friends in the systems house market - and in the UK 45% of its business comes from third parties.

In recent weeks systems houses have reacted angrily to DEC suggestions that they should concentrate on specialist industries, the implication being that DEC should be handed the end user market for general applications such as accounting.

If the company gets even more threatening and starts taking systems to court, what is now a simmering pot could boil over and firms which make up that 45% of DEC's business could start moving towards the likes of IBM and Wang. These aggressive companies are now putting a lot of effort into wooing systems houses.

If DEC loses the Darkcrest case the result could be disastrous. Those who believe the company is trying to frighten its small competitors in the end user market would not doubt feel justified in shouting about it. There could be a massive loss of confidence in DEC by systems houses in particular. And the company could find itself before an EEC monopolies enquiry, for Darkcrest and other systems houses are preparing a case against it.

DEC has long been respected as a gentlemanly company with quality products. But win or lose, it now risks going the way of the barbarian in this David-and-Goliath battle.

## Where were the Brits?

If you came to the conclusion that technologically, the United Kingdom did not exist at the Hanover Fair, you could be forgiven. Among the 3,500 electronic and computer companies exhibiting, just 39, a little over 1% of the total, were from the UK.

But it wasn't just the numbers - exactly the same as the Swiss contingent - which were a sad mark of the state of the UK computer industry.

Quality and size count too, and over one third of the UK companies were appearing in the shape of little more than a name on a trade association stand. Alone, almost like a surrounded Custer waiting for the knife to fall at The Little Big Horn, ICL provided a stand which was at least in keeping with the image we like to have of the UK as a significant industry presence. So good on 'yer ICL, but what about the rest of the UK computer industry, in which Mrs Thatcher and her ministers place such hopes?

The short sharp fact is that the biggest computer company in the UK, IBM, is an American company, and so is every other computer company in the top 10 in the UK, except ICL, which is the second largest company, but almost £350 million in turnover behind IBM UK.

There is nothing wrong with having a free market and loads of foreign companies in it, quite the opposite in fact, but something somewhere is more than amiss when the UK appears at a top European Fair in the shape of a national contingent so small that we rank on a par with the Swiss.

The conclusion is simple: the UK if it is going to have any future in the age of IT, and any exports to offer to that age, is going to have to do some hard analysis, and the government some hard thinking, on just how we are going to compete with the best in the world.

## 1984 and all that...

THIS week's example of the strange things people say about computers was sent in by N. R. Patterson of Fife, Scotland, who writes:

Court officials withdrew the fine imposed by a judge last week and blamed a computer.

## LETTERS

## Putting the record straight on SSP

INDUSTRY's reaction to the production of test data for SSP systems has been remarkably divided.

A number of manual and computer systems houses have actually said how helpful it was and have made appropriate changes to their software - others have protested loudly but have nevertheless indicated that they have made or are making changes - and a number have buried their heads in the sand.

In a letter from Target Computer Group (Computer Weekly, April 7) the group marketing executive implied that IMS is selling its own product while offering "independent" advice. I must emphasise that we have no financial connections with any systems house producing SSP computer software.

It is time that the record was put straight and the discussion on SSP, one of the most fundamental changes to occur in personnel and payroll administration, developed in a more positive form. SSP systems sales will be a major market over the next few years.

We know quite a lot about SSP and have trained payroll staff from many large corporate organisations irrespective of the SSP system be-

ing considered. The constituent elements of our manual training package, developed last year, are available as a modular manual SSP system, a solution only recommended for the smaller employer, but more importantly to record supplementary information for the many payroll programs incorporating the minimum legislative requirements.

A bureau offering monthly processing cannot, with the best will in the world, supply adequate SSP entitlement information in time for the issue of the necessary exclusion and transfer forms.

Rees also alleges that IMS failed to arrive for a hands-on test - our tester's report indicates that the appointment was formally cancelled and that at January 16 the system was not demonstrable.

This position of unreadiness was echoed throughout the industry - how many software houses had supplied an SSP system by February 8?

Further, information on the Target SSP system supplied to me personally on January 17 contains a number of major errors of analysis. One we particularly liked was the quite specific instruction that SSP is to be treated as earned

income and subject to NI and PAYE, but company sick pay additional to SSP shall not be subject to NI and PAYE.

We wish it were so! It has been our experience that the analysis of the Social Security and Housing Benefits Act and its associated regulations has not been thoroughly carried out.

The reasons for this should be examined thoroughly as it is likely that SSP will be followed by further unbundling by the government.

A number of systems houses have indicated that information was not readily available from the DHSS, who in return say that the legislation was developed in consultation with computer users and, after all, the Act and regulations are there to be studied.

As a result of this confusion, the whole discussion on SSP has missed the one essential point that, used properly, not only can SSP make a significant contribution to company sick pay schemes but that the administrative burden can be funded.

M. D. COPELSTON  
Managing director  
IMS  
Exeter.

## Impact of Esperanto on computing

JOE CELKO's article (Computer Weekly, April 7) about "storing words in a messy language" was excellent, but may still have left your readers with a serious misunderstanding.

The main use of the international language Esperanto is not to make life easy for the designers of computerised dictionaries. No, it is used by millions of people around the world to communicate with others on whatever subject interests them, whether it be the

design of microchips or the state of the weather.

The simple structure of Esperanto means that they don't need to be linguists or have to spend years learning it.

Your readers have now missed the Interkomputo international computer science symposium and exhibition in Budapest which was conducted entirely in Esperanto. However, those who start learning it now will be fluent well in time for the next one in 1984.

And for those whose travel budgets don't stretch that far, a 1984 stamp is all you need to correspond with a non-English speaking computer scientist or user in another country.

The first step is to write to the British Esperanto Association at 140 Holland Park Avenue, London, W11 4UP and ask about the free 10-lesson correspondence course.

FRANK SHARMAN  
Chester.

## Flashing cursors

MR WOODNICK (Computer Weekly, March 31) can be reassured: there is nothing "subliminal" about flashing cursors. If there were, they would be perceived not as flashing, but as steady.

The essence of a subliminal image is that it cannot be consciously seen, and the viewer processes a whole message without being aware of it. Flashes on any system I have encountered have always been at far less than the critical fusion frequency (about 30 a second for dim lights, nearer 70 for brighter ones), and are consequently always seen as separate events.

Even if they were above the critical fusion frequency, there would still not necessarily be any involvement or subliminal phenomena; at least no more so than anything else depending on the "phi phenomenon" (apparent movement), such as television and film. The likeliest explanation of what he has observed is that the eye is primarily a movement detector; that a flash (by stimulating cells in the same manner as a moving light) is perceived as movement; and that the use of flashing cursors reduces the time and effort needed to locate them.

This may place less strain on the operator and thus be beneficial.

The rate of flashing is too low even for the risks to people prone to epileptic seizures that can arise from "flicker" on cinema and television screens; I am a little dubious, however, of any situation requiring anyone to respond to even as many as five prompts at any one time.

In passing, it would have been useful if Woodnick had given references to the tests he mentions, so that it would be possible to examine the experimental method used and the results obtained.

FAMELE E. M. MADDISON  
London SE12.

## DOWNTIME

## Dangerous ground

LEAGUES and ladders dominate the sports of this world obsessed with winning and losing. In some cases there is little cause for dispute, since the rules are well defined, as in football or cricket. But in others, like tennis, a computer is needed to work out grand prize rankings according to a more complex formula.

Here the trouble begins, and it is unfortunate that the lay media has a propensity to blame the computer, when it is the ambiguity of the rules that is at fault. John McInroe, regarded by many as the finest tennis player of our times, but afflicted with a self-destructive personality, was recently grumpy that the computer had let him down as number three in the world.

Meanwhile computers are treading other dangerous ground: One



is being used to track the fitness of the 147 participants of the Sunday Times Getting in Shape project. Using a technique developed at London's Brompton Hospital, the body is photographed using light split into strips, and the images analysed on computer. A direct comparison with previous images tells you how much flab has been gained or lost, and yields a display that makes one look like a zebra.

## 10 YEARS AGO

FROM COMPUTER WEEKLY OF APRIL 19, 1973: The government's unequivocal support for the British computer industry was the main theme of a speech by Kenneth Baker, Parliamentary Secretary to the Civil Service Department... Star of the Datafair 73 exhibition was the GEC 4080 computer... Capital Radio, due to take to the air, was negotiating with EMI for an automation system worth £20,000.



## The games they play!

IT's enough to turn one green to hear of these adolescents making a fortune from computer games they have developed, when their faces still have the cherubic look of choirboys.

You can read about one such youngster in our Workplace page - a mere boy of 16, who runs a software team and employs his mother to clean the floor.

A proud mother she is. But are

## A bit of realism

"THE user friendliness of Reality is achieved through the use of English - a specially designed data management language," writes some public relations person. Indeed, I wonder how this would take the great lexicographer Dr Samuel Johnson, author of the first comprehensive, if idiosyncratic and often inaccurate, English dictionary.

One thing Johnson could not abide was cant, for which he prescribed a pint of ale as remedy. Nor could he stand debasement of our great heritage, the English language.

No doubt in my mind that Reality's words would be more than he could stomach.

Come to that, the word Reality would probably have stuck in his throat. For above all Johnson was a dreamer - he even believed he could write poetry.

## Famous name disappears

THE grand old name of Univac has at last disappeared from the computer industry. Sperry Univac is now just plain Sperry. The name Univac, it seems, has become an embarrassment, reminding one of it does of old vacuum cleaners and exhibits at the Science Museum.

Sperry has for years been trying to disassociate the industry from contracting its old name to Univac, and has had trouble convincing some of us that the company is in the fourth generation of computers.

Sperry used to be just Sperry Univac was sufficed to the bill with the release of the Univac 11/0, the first computer to be sold to a civilian user.

During the ICL crisis in 1980, some even wondered if there might be a Sperry ICL, until the government stormed in with cash, Laidlaw and Wilmut.

## Safe at last

IT would be a tragedy for us all if the next Parliament were to lack the diplomacy, tact and energy of IT manager Kenneth Baker. So you will be pleased to learn that he has found a safe Tory constituency, Mole Valley in Surrey, for the next election.

His present seat at Margate has been swallowed up by various changes, and he failed to win the nomination for his first chance of a new constituency.

## Master of the Universe

IT is easy in the computer industry to lose sight of reality and let loose rhetoric to suggest powers that shall we say, existentially considered, the preserve of God Almighty in his heaven. So it was that James Meritman, in unveiling the UK Universe project to link high speed computers by satellite, introduced himself as chairman of the Universe Steering Committee. Indeed

is being used to track the fitness of the 147 participants of the Sunday Times Getting in Shape project. Using a technique developed at London's Brompton Hospital, the body is photographed using light split into strips, and the images analysed on computer. A direct comparison with previous images tells you how much flab has been gained or lost, and yields a display that makes one look like a zebra.



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## Protection

FURTHER to your two-page spread on data protection (CW, April 7), I found it difficult to understand the purpose of the writer. Is Hannan Rose seeking a platform against the government, or against lawyers or against the computer industry? If so, he falls on all points because I defy anyone to understand his article without a copy of the Bill beside him.

On the other hand if the articles are intended to be a thoughtful analysis of data protection so that the computer industry can understand the issues, then they fail again. Nowhere is there any mention of the Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (European Treaty Series No 108) which gives definitions in very simple terms.

BRIAN W. HAINES  
Barrister-at-Law  
London NW1.

## Inmos second sourcing

IN your cover report on Inmos (Computer Weekly, April 14) you stated that Inmos had announced that it would act as a second source for Fujitsu's memory products. This is emphatically not the case.

At our Press conference the possibility of Inmos entering agreements for other companies to second source its products was discussed. No such agreements have been entered into.

It was also mentioned that Fujitsu has produced a part that is functionally compatible with the Inmos IM2600 advanced 100 nanosecond 64K dynamic RAMs. It adopts the features of nibble mode and CAS before RAS refresh that were pioneered on this product. Thus it is Fujitsu which is providing an alternative source for an Inmos product.

R. J. SELWOOD  
Manager, External Relations  
Inmos







# SOFTWARE MONTH

The 1970s honeymoon for database is over — and now is the time to sit back and take an objective view

## Data — based on out-of-date principles



BOOTH... "Hardware manufacturers use software to control their accounts."

"DATABASE technology has always promised more than it has been able to deliver. The high hopes and optimistic predictions of the pioneers and pundits of the late 1960s and early 1970s have not been borne out in practice — at least, not yet." So begins the current Xephon User Survey, *Database in Practice*.

Despite the necessary caveats that preface this statement, warning that "The survey does not purport to be a statistically valid profile of database usage... in general", it nevertheless strikes a sympathetic chord among all who have ever been tied into a large-scale database system.

The honeymoon for database, which really existed throughout the 1970s, is now over; and perhaps for the first time we are able to sit back and take an objective view of the situation.

The first and almost heretic discovery we make is that database is no longer the revolutionary

concept we automatically assume it to be. In fact, many of its fundamentals are actually based on totally out-of-date principles. Cobol, for example, is a basic facet of Codd's databases. And yet the basis of Cobol was laid down at a time when IBM was still supplying vacuum tube computers.

Even Adabas, a system with an inherent leaning towards the currently in-vogue relational approach, and consequently considered one of the more modernistic of the databases, was nevertheless first devised in 1969.

The database has been around, largely unchanged, for upwards of 20 years.

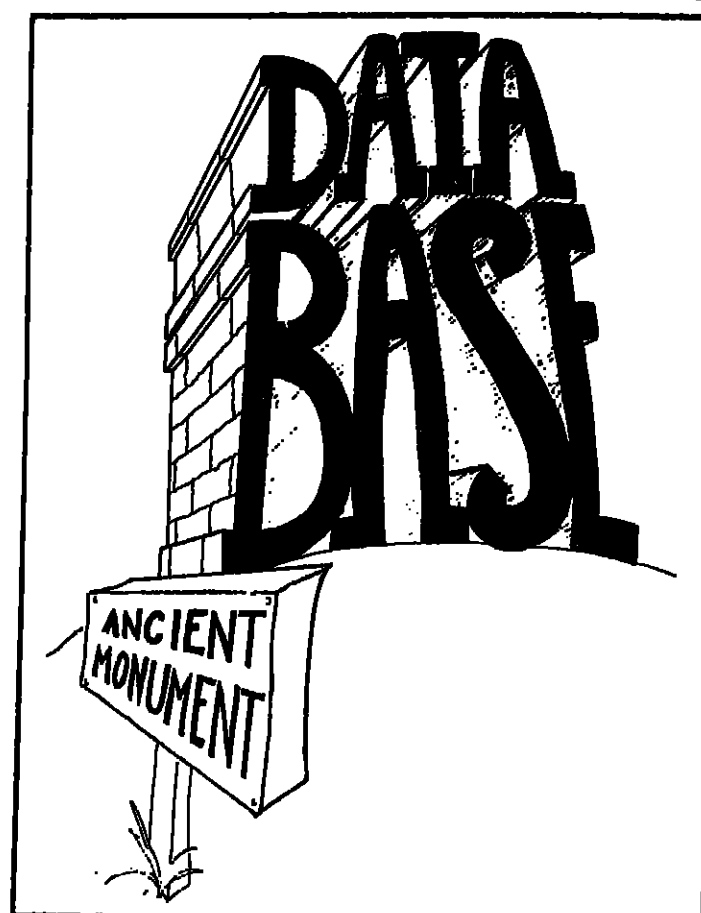
No one would suggest that hardware has remained unchanged over the last 20 years. Why, then, should this be so of software? Terry Booth, of Cincom Systems and Total fame, believes it is due to the success of the hardware manufacturers.

"Hardware manufacturers," he says succinctly, "use software to control their accounts." (If pushed, he will accept that software companies do exactly the same!) "IBM has always done it, and now even DEC has begun."

The principle is simple. A company's investment in applications software will soon far outstrip its investment in physical hardware. Thus, if a hardware manufacturer can persuade a customer to adopt its own software — software that will only run on the manufacturer's own hardware — that customer is unlikely ever to change to an alternative source.

Conversion costs for major databases can be quoted in millions of pounds; and with labour costs continuing to increase, this will only get worse.

The independent software



suppliers do exactly the same. It is not in their interests for users to be able to change to an alternative source at the drop of a hat. Paradoxically, it is the very success of this policy, using software to control accounts, that has created the monolithic database that is out of time with its own surroundings. The cost of developing a new database is exorbitant: the cost of

Even if the software suppliers could afford to develop new software, it is perhaps unlikely that they could get existing users to buy it

converting from one to another is prohibitive. So, even if the software suppliers could afford to develop new software, it is perhaps unlikely that they could get existing users to buy it.

Most mainframe users and even large-scale minicomputer users are already using individual database packages, and would not take kindly to the supplier who would either persuade them to change or threaten to abandon existing support. The paradox is clear: in trying to lock-in custom-

ers to their own products, database suppliers have also succeeded in locking themselves in.

But as everybody knows, in a competitive market you must expand to survive. The quandary facing the database supplier is that much of the large-scale market is already saturated, and the greater part of the new small-scale market is going to the increasingly powerful microcomputer and the increasingly more successful micro database.

It should be remembered that the 32-bit Motorola 68000 microprocessor, now the favoured chip for the latest generation of micros, is as powerful as some of the earlier 360 mainframes; in other words, the modern micro is even more powerful than the mainframes that were around when database was first developed.

When these powerful micros are added to the potential of the local area network, it becomes clear that many potential new users never even consider mainframe databases. The result is that existing mainframe database suppliers are forced into ever more ingenious methods of maintaining and, if at all possible, increasing their user base. These methods are defining the future of database, for we can be certain that the techniques developed on mainframes today will be available on micros tomorrow.

As Clive Hutchinson, marketing director for Adabas Software Ltd.

(ASL) puts it: "The aim of any successful DBMS supplier must now be to provide an integrated set of database and data communications products. Today, such a set must include productivity aids and end user facilities and, arguably, TP monitors."

He was, of course, thinking about his own company's integration of Adabas (database), its dictionary (Predict), and its communications language, Natural. What is missing is a high-level (perhaps it would be better defined as a "very high-level") query language. ASL accepts this, and admits to be working on it.

"Languages like Natural," says managing director Len Jenkinson, "will also provide the vehicle for even higher level languages for use by end users — not just for access, but also to update the database. Such languages will be devoid, as far as the user is concerned, of procedural logic and syntactical construction."

"In my opinion," he explained, "there are three categories of end user. The first category includes the type of person with little computing ability or experience and no desire to obtain any."

"The second category includes those people with no experience of computing, but a willingness to learn and the ability to be taught."

"Finally, the third category is that type of person with both ability within, and experience of, computing. This category usually includes engineers, chemists, physicists, accountants and other professionals who probably already have access to query languages, report writers, subsets of BD/DC languages, and so on."

"It is my experience," said Jenkinson, "that most end user offerings so far available only satisfy, or are suitable for this class of user. And if we are really honest, this type of user will get at whatever facility is available, provided that it is seen by him as cost effective in terms of his time."

"The first category will probably never be able to formulate any sort of enquiry except those which are the basis of his own job. If his task is aided by a computer, it will almost certainly be via a purpose written transaction through the DP department."

"The second category" — the category which, incidentally, he believes to contain the vast majority of end users — has very few special productivity tools. But with schools taking computing more seriously, this is the category growing at the fastest rate.

"I conclude," says Jenkinson, "that the software industry has to turn its attention very seriously to this type of end user. He represents over half the user population, and his ability (although perhaps

Continued on page 19

## SOFTWARE MONTH

### Horror stories of abortive expeditions

From page 18

limited individually), when viewed in total could be the most significant factor in seeing DP through the next two years."

And the way to address "this type of end user" is via the combination of query languages and relational databases. "Relational databases," continued Jenkinson, "are very much in vogue at present and not without good reason. Their strength is in the flexibility they offer with respect to accessing the data."

"Since the exposition of the relational theory by Codd in the 1970s, it has been recognised that the relational approach leans more towards Adabas than other DBMSs. Adabas can easily accommodate relational files."

As far as query language is concerned, "ASL is developing end user enquiry/update software which permits user staff with little knowledge or experience of data processing to access and update an Adabas database producing at the same time quite sophisticated Natural programs (but without the user having any knowledge of Natural). The result will be efficient programs without assistance from the DP department."

One of the best known, and for various reasons, controversial, of today's database query languages is IBM's SQL. Jenkinson, as a rival producer, clearly has his doubts. "With products such as SQL, as far as I am aware, the user needs to know about the tables

defined to the system and be able to generate new tables using some form of relational algebra. Again, I believe such requirements are beyond the ability of many end users."

Nick Pollard, managing director of rival Applied Data Research, also has his doubts. It's almost as if something about SQL simply doesn't add up. "From a marketing viewpoint, SQL puts IBM in a somewhat awkward position because for the last dozen or so years they have been pushing IMS and DL/I as being the databases to implement, whereas at the same time they were labouring in their midst the father of relational databases, Edgar Codd. They were thus in the position of wanting to promote SQL in terms of its end user query facilities but not to threaten in any way the existing IMS/DL/I user base. This paradox was resolved by promoting SQL primarily as a query language while playing down the fact that it hides an implementation of the relational model with full database facilities."

"The greatest strength of SQL," says Pollard, "appears to be in the language syntax and its use in procedural programs as well as ad hoc queries. This reduces the learning curve of users, especially those who write both programs and queries."

But he also perceives two primary weaknesses. "First, the data must be extracted from other databases and placed in a different format before it can be accessed by SQL. This process takes extra people, time, disc space and computer resources to accomplish. It also requires complete duplication

rounding the database underlying structure — that is, the actual database management structure underneath SQL provided to manage the physical database. As far as one

can determine from the published literature it is definitely not relational in nature. This deficiency will cause short-term problems with users begin to depend heavily on SQL for their major data processing functions."

One must also wonder what the long-term impact is of a relational system built on artificial



POLLARD... "One must wonder what the long-term impact is of a relational system built on artificial accessing techniques."

mat before it can be accessed by SQL. This process takes extra people, time, disc space and computer resources to accomplish. It also requires complete duplication

There have been so many horror stories that describe abortive expeditions into database that only the larger organisations, with virtually unlimited resources, can afford the risk

of the data and raises serious questions with regard to the currency of the data used by SQL.

"If the data which has been extracted is then updated, it raises further questions about data integrity, and leads one to doubt the merit of the entire approach taken by IBM."

The second major weakness about SQL is the mystery sur-

rounding the database underlying structure — that is, the actual database management structure underneath SQL provided to manage the physical database. As far as one

can determine from the published literature it is definitely not relational in nature. This deficiency will cause short-term problems with users begin to depend heavily on SQL for their major data processing functions."

One must also wonder what the long-term impact is of a relational system built on artificial

John Winnington, manager of technical support services at MSA, has his own views on the ageing of database. "The days are gone," he

says, "when an organisation will go database simply because it is there. Even companies with an existing database policy, but a requirement for a new applications package, will now often ask themselves, which version shall we have — database or non-database?"

"There have been so many horror stories," he continues, "that describe abortive expeditions into database that only the larger organisations with virtually unlimited resources, can afford the risk."

"Data Dictionary, for example, is a concept that has been blown around the DP field since the mid to late Seventies, but I fear the number of successful implementations can be counted on one hand."

"Successful database," he concludes, "should not be considered so much a product, as a concept."

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JENKINSON... "Relational databases very much in vogue."



# The way forward for database

Ease of use by unsophisticated end users is the trend

THE obvious way forward for database can be seen in the clear trend towards making it easier to use by the unsophisticated end user. At the same time, the increasing power of the microcomputer means that many new users are not even considering mainframe or minicomputer database.

Ease of use can be obtained by three features: relational databases, high level query languages, and data dictionaries. Internally, the database is becoming ever more sophisticated; externally, the view seen by the user, is becoming ever more simple.

According to Alan Mayne, manager of the communications division at the NCC, "There are already a number of relational DBMSs available. In a relational system the data is viewed as a collection of simple tables. A table

can represent a form or ledger in a manual system. This makes relational systems very easy to understand, so end users may use them directly. Their powerful query facilities allow data to be selected and extracted from tables. A number of tables may be combined or 'joined' just as you may cross-reference two forms.

"Dictionary systems are valuable tools for documenting the organisation and the DP environment. In the future, more software products will be integrated with the dictionary. The dictionary will become the 'hub' of the wheel because it contains the basic data and the process definitions needed by other software. Information should only need to be collected, verified and stored once.

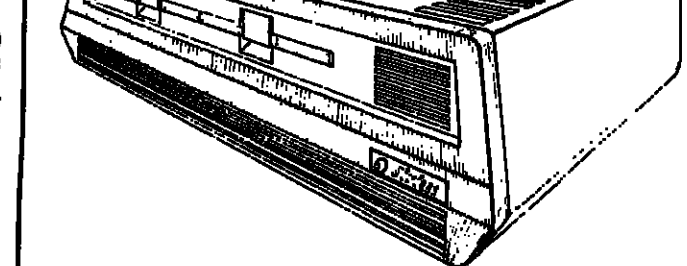
"The idea of database is now widely accepted. The data is held

once (or repetition is controlled) and all application systems share this data. The same principle can be applied to processes. Instead of repeating validation rules and formulae in numerous applications, these rules can be held once and shared. This approach greatly reduces the effort needed to complete an application.

"Perhaps the end of the programmer is on the horizon, just as the age of the punch operator has passed its peak."

So are the days of the professional programmer limited? "In the software house or computer manufacturer," says Adabas managing director Len Jenkinson, "the answer must be 'no'; but in the commercial/scientific installation the answer may well be 'yes'."

But, as his marketing director Clive Hutchinson also points out:



"There is no doubt that the microcomputer is about to offer a real database capability. The first relational database systems are already on the market and are accepted more readily than one might have dared hope."

"Software is not, and never will be, a substitute for good management. Successful use of database depends not only on the ease of use of the selected database, but also on the degree of commitment, vision and applied common sense by DP management."

Nick Pollard, managing director of ADR, agrees with this general trend. "The major emphasis in the direction of the ADR/Datacom system is towards end user query languages. Such languages must be available and provide ready access to data by anyone authorised to do so.

"All data must be accessible, and no pre-planning should be required; equally the data must be fully protected against unauthorised access. Unpre-planned access is impossible within embedded pointer systems, and that is why users of DLI, Total and IDMS are forced to use other products to provide such facilities."

In some senses, this addition of query languages, dictionaries, directories and advanced report generators is rather like the *Daily Mirror* strip cartoon's Wellington selling Marlon a "go-faster" stripe, or a new set of oil wheels - they may or may not make the thing go faster or smoother, but the basic buggy remains the same.

Manufacturers and software suppliers have been so successful in locking the customer into their own products, that it is now very difficult either to develop or sell a new large-scale product. And this means that the basic database structure no longer reflects the state of current hardware technology.

Terry Booth, UK general manager of Cincom Systems, believes that the producers of Total have found the way forward with TIS.

TIS (developed as a Total Information Service) has been rumoured for several years but has now been released and already has 40 sites worldwide, with a successful UK implementation at Leyland Paris.

It is a single directory (a dictionary plus) that protects the user from the physical database, and so prevents the user from becoming locked into a single hardware

supplier. Because it sits between the user and the database, it becomes irrelevant to the user who the physical database looks like, even which database it is. This makes it an ideal solution for the database user who wishes to relinquish his dependence on IMS without losing his existing investment in that database.

It is not just a conversion tool, for its main aim is not to teach customers away from IMS, but to allow those same users to use, say, Total, as well as, and transparently to, IMS.

But the important fact for the future, according to Booth, is that the "insulation from database that TIS facilitates is allowing Cincom to build a new DBMS (currently nicknamed Queen Ann) that will possibly be available later this year."

It is at the moment in the field on controlled release for final testing, and has, says Booth, "been specifically structured for high performance processing on the latest range of IBM mainframes, taking advantage of the new operating system and access facilities, and the new disc technologies."

No comment on the future of database would be complete without a look at microcomputer database. "There is no doubt," says Andrew Bythway, technical services manager at R International, "that the microcomputer is about to offer a real database capability. The first relational database systems are already on the market, and are accepted more readily than one might have dared hope."

"The best of these include both interactive query and batch program facilities. It seems natural for the data dictionary concept to provide a working link between these new microcomputer packages and some of the system generators that can be expected in the future."

"The data dictionary will become no more than a staging point in the increasingly automated processes of system development."

It would appear that we can expect the new micro databases to learn rapidly from the mistakes and experiences of their larger cousins. And indeed, some are even designed to work hand-in-glove with them. Compu's new Delta system, interestingly described as "two-tier hierarchical" - that is, a compromise between the relational and hierarchical - can pick up and use output from mainframe DBMSs provided only that the output is in sequential CP/M or MSDOS file format. This is of particular relevance to IBM installations, and will shortly be of similar importance to DEC installations as well.

"Some of the packages that are available," continued Bythway, "are very friendly, elegantly constructed, and offered with a next day or two of training. Whether novice users can get to grips with some of the concepts involved remains to be seen. Some of these concepts are already becoming quite sophisticated."

# Lisa is impressive - but a June release date is optimistic

David Ferris believes Apple's new system is not as ready as it seems

APPLE's recently-announced personal computer, the Lisa, is an important machine which, at first sight, is hard to assess: the tightly controlled presentations cause people unfamiliar with the technology to feel somewhat awed and speechless.

To get a better feel for the product than is given by the sales presentations I accepted Apple's invitation to test a pre-release version. As a consultant, I have often been asked to review the state of products under development; and having now tested the Lisa, I am impressed with it. But the product isn't nearly as ready for market as Apple would have us believe - the scheduled UK release date of June 1983 looks optimistic.

Apple has decided, rather heretically, to go it alone software-wise, at least as far as the main general-purpose applications go. It has developed, or is developing, various programs for business users: a spreadsheet (LisaCalc), a word processor (LisaWrite), a file manager (LisaList), a graphics processor (LisaGraph), a free-form drawing package (LisaDraw), a project planner (LisaProject) and a terminal emulation package (LisaTerminal). Some of these are eye-catching, and the desk-top context they are presented in enhances their attractiveness considerably.

Apple has put a great deal of effort into developing all this software, and the firm correctly describes the Lisa as a software machine. Much of the effort has been, productively, because Lisa sounds in facilities unprece-

ented in the personal computer world. Thus LisaWrite has magnificent, typesetting quality word processing, and LisaProject lets the user manipulate network diagrams in the natural way, rather than via oblique references to numbered tasks.

The free-form drawing capability is so new to me that I have difficulty in assessing it, but it promises to be a boon to many applications.

So the good news is that Lisa is genuinely attractive. The bad news is that when you sit down and use the software, you find things are nothing like as rosy as the sales presentations suggest.

Apple is making a big thing about "pointing rather than typing", but typing is far preferable. Apple must have come to recognise this, because on many menus you notice it has been forced to include "Apple keys". These are nothing more than traditional control key sequences.

Apple's proprietary applications - LisaCalc et al - display excellent command consistency, and the windowing ability to view two or more applications concurrently is useful.

Further, the ability to interchange heterogeneous objects between applications (eg spread sheet to pie chart to free-form drawing) is far superior to existing integrated packages.

Nevertheless, the transfer of objects between applications (eg spread sheet to graphics) requires too much effort.

You still have to go through a

process which parallels the traditional multi-step dumping of a file, loading the new application, and reading in the dumped file again.

So if you change your spread sheet, you still have to go through significant effort to reflect the changes in your bar or pie chart.

When you want to do a spread sheet replication (a common action) you are forced to go through a series of ungainly steps, and clutter your mind with extraneous notions such as cutting and pasting on to an intermediate clipboard. Anyone but the most novice of users will find it much easier to type in the normal kind of cryptic command string, eg "R, return, A4.A15, return".

The main parts of the code are in place, but the remainder - the part required to bring it up to release quality - is not yet complete.

For example, the replicate com-

mand needs the spread sheet to scroll as you point to the replicate range - it doesn't, and you have to use an undocumented quick fix-up; LisaWrite has vertical scrolling using an elevator bar, but the horizontal elevator bar is missing; manual index references are erroneous; and bugs are easy to find - it's easy to run out of memory space when using the different applications.

Unfortunately, cleaning up these kinds of problem ends up taking vast amounts of development time, as many software houses have found to their chagrin. The software requires a lot of polishing to bring it up to release quality.

In addition to the final polishing issue, a lot of things users need and expect now are being left to (often distant) future releases. You can't use LisaList names and addresses for a LisaWrite mass-mailing; Li-



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saList has no formatted screen data entry and query facilities; and in February the terminal emulation package was not even ready for beta test type demonstrations (as opposed to the sales presentations). If you want to develop a turnkey system in Cobol, there's no formatted screen support package; no

window, mouse, and menu support packages; and no shared database access for each user.

Apple has announced an optimistic release schedule within which is must bring Lisa to release quality.

The projected initial release date of June looks unattainable to me, because I don't see how they can have proper beta testing for all the software done in time.

To release as planned will, I believe, bring support nightmares for the firm.

Lisa's proprietary applications may be ready for restricted, controlled release by late summer, but I can't see a general release of the applications being wise until at least the end of 1983.

Similar reservations apply to further product announcements. In particular, the firm has correctly recognised the need for mainframe and inter-Lisa networking facilities, but is leaving itself a very short time to do the work.

Lisa is an important machine, but many users should treat the announcement in the IBM sense. To my mind, Apple has uttered a firm public statement that Lisa is in the works, rather than a happy cry of "on your dealer shelves next week".

David Ferris

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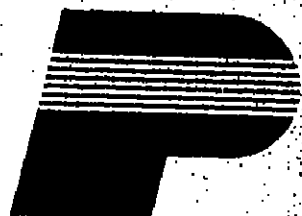
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MAYNE: Dictionary will become the new SSP

# Lisa's attractions

SOME of the most notable of Lisa's features are:

- **Desk-top Model.** When using Lisa, what you see on the VDU looks like a desk-top. You can preview different worksheets from different applications at the same time, you can clear worksheets off the desk-top by putting them into folders, and you can drop files by dropping them into a wastebasket.

Those familiar with Xerox's Star computer - the first commercial offering of this desk-top interface will recognise that Lisa derives directly from it.

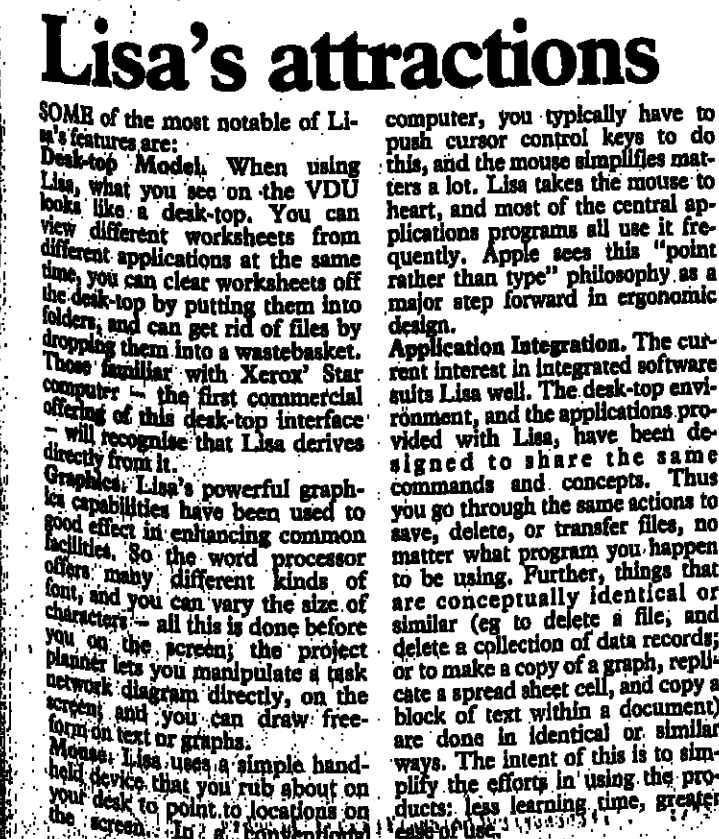
Graphics: Lisa's powerful graphics capabilities have been used to good effect in enhancing common facilities. So the word processor offers many different kinds of characters - all this is done before you on the screen; the project planner lets you manipulate a task network diagram directly, on the screen; and you can draw free-form on text or graphics.

Menus: Lisa uses a simple hand-held device that you rub about on your desk to put locations on the screen. In a conventional

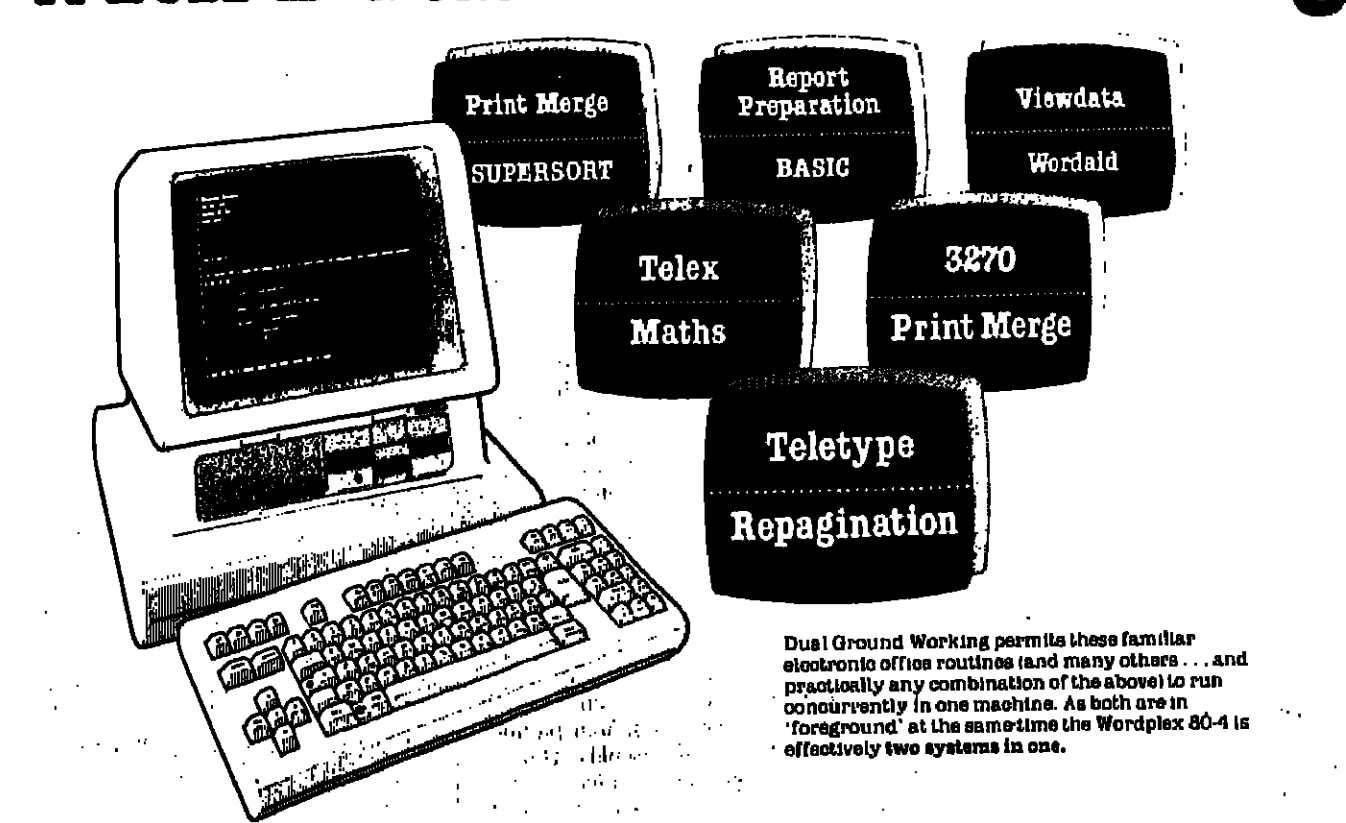
computer, you typically have to push cursor control keys to do this, and the mouse simplifies matters a lot. Lisa takes the mouse to heart, and most of the central application programs all use it frequently. Apple sees this "point rather than type" philosophy as a major step forward in ergonomic design.

Application Integration. The current interest in integrated software suits Lisa well. The desk-top environment, and the applications provided with Lisa, have been designed to share the same commands and concepts. Thus you go through the same actions to save, delete, or transfer files, no matter what program you happen to be using. Further, things that are conceptually identical or similar (eg to delete a file, and delete a collection of data records; or to make a copy of a graph, replicate a spread sheet cell, and copy a block of text within a document) are done in identical or similar ways. The intent of this is to simplify the learning time, greater

Lisa's high resolution screen can display all integrated software applications simultaneously. Shown here are (clockwise left to right): LisaGraph, LisaWrite and LisaCalc.



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## BOOKS

# Perfect way to keep data secure

**Cryptography and Data Security.** Dorothy Elizabeth Robling Denning. Addison Wesley Publishing Co. £12.50

PASSWORD security systems have, until recently, been considered adequate protection for most computer installations except those in the area of defence. Heightened public awareness of systems storing confidential information and the inadequacy of the law with regard to data privacy and protection are now forcing many commercial concerns to look at alternative methods of guarding their files.

Data encryption is a method of security that lends itself perfectly to a computer installation — performing algorithmic calculations at high speed is what computers do best — and it can easily be incorporated into I/O routines.

Since the market for secure information systems is predicted to quadruple by 1986 in the US, according to a Frost & Sullivan report, there will also be a need for programmers in the UK to acquaint themselves with encryption techniques.

Dorothy Denning's book is aimed at this type of readership and at getting the reader to "think" cryptography, regardless of the type of cipher used. Sensibly, she chooses to teach through lively use of diagrams, expressions and concepts that would be difficult to explain in words and almost impossible for the student to visualise.

Given that the only type of cipher capable of achieving perfect secrecy is one using a non-repeating random key stream for one message only, called a "one-time

pad", the book sets out to demonstrate alternatives based on mathematical theories that could hardly be described as simple to crack. After introducing the reader to the concepts of number theory, on which the majority of algorithms and cryptology techniques are based, the author goes on to ex-

plain the working of different types of cipher. These include homophonic substitution, polyalphabetic, polygram substitution, product, exponential, knapsack and block ciphers.

Considering the mathematical complexity of the topics the author has chosen to cover, she has pro-

duced a readable and informative book. Her enthusiasm is obvious throughout, and it is easy to imagine her playing the encryption games included in the book with her students at Purdue University.

Maggie McLening

## History of the industry

**The Computer Establishment.** Katherine Davis Fishman. New York: McGraw-Hill. Paperback. \$7.95.

KATHERINE Davis Fishman, a New York writer, has laboured for 10 years to produce this work, which traces the history of the computer industry as a whole and some of the histories of the brightest stars in the computer universe. Her labour has paid off, since she has produced one of the most readable, informative, entertaining books yet written on the subject.

Anyone who works with computers, buys them, or is affected by computers — which is to say, everyone not living on a desert island — will benefit from reading the book.

Fishman was fortunate in having access to many of the key players in the industry — among them, and uncharacteristically, IBMers. She has produced a work that often sounds like a first-rate adventure novel.

Howard Karten



**Fibre Optic Data Communications Network**

**INTRODUCING THE NEW DART SYSTEM**

**FOCOM SYSTEMS**

## Making processors more friendly to human beings

**The Intimate Machine.** Neil Frude. Century Publishing. £9.95.

DR FRUDE's wide-ranging study examines a number of ways of encountering the inanimate and speculates on the possibility of relationships between men and machines. To speak of the computer as a "social intimate" able to generate its own presence is not, he contends, whimsical. *The Intimate Machine* explores a range of attitudes from the biological chauvinism which insists on the intrinsic absurdity of the notion of an electronic personality to the anthropomorphic description of chip technology in terms of "intent", "realisation" and "knowledge".

Arguing from the data of psychology and anthropology, Frude concludes that a principle of animism operates in sophisticated adults as well as children and primitive tribesmen. Animism is the universal tendency to interpret the world in human terms, to discern faces in rocks and clouds, to discover a ghost in every machine — whether soft or hard.

The problem, as the hacking fraternity has discovered, is not whether it is possible to become emotionally involved with a computer but whether excessive commitment to a box of circuits might

result in de-socialisation: "fed back loops and Fast Fouriers have taken over from friendship and fun".

A number of investigative programs, medical and psychotherapeutic, have proved popular with patients. In a Glasgow hospital alcoholics admitted a 50% greater intake of alcohol when interviewed by a machine rather than a human consultant.

A specialist knowledge of dolls, puppets and other automata as well as an admiration for the automatons of the Disney "Imagineers" leads Frude to consider ways of making processors more friendly. Sections on the problems of robotic locomotion and such aspects of artificial intelligence as the comprehension and replication of human speech tend to produce paradoxes of the kind "there is more to visual perception than meets the eye".

Anecdotal in approach, this book is clearly intended for a non-specialist readership for whom it rehearses a brief history of the computer and some of the fundamentals of programming.

For the most part fluent, it is nevertheless capable of such monstrosities as "disambiguate".

John Melmoth

## Take it or leave it approach to Basics

**Implementing Basics: How Basics Work.** William and Patricia Payne. Reston/Prentice Hall. Paperback, £11.95.

THE title contains the ugly word Basics twice, but the text itself does little to justify the plural. It should have been called *Implementing Wang-style Basic*, circa 1975, since it concentrates almost exclusively on one dialect at a particular stage in its development.

It is a worthy enough effort, allowing for its limitations.

The reader will find plenty of details about text stomisation (or "tokenising"), about storage of variables and arrays, about the use of stacks in evaluating expressions and controlling program execution, and much else besides; but there are very few indications that

for most methods presented there exist alternative, sometimes preferable, ways of doing things. The approach is very much take it or leave it.

Given the competition, such as Peter Brown's *Inspirational Writing Interactive Compilers and Interpreters*, my advice would be to leave it.

The Basic user will not be greatly enlightened by knowing the nitty-gritty of a system he is unlikely to be using, while the would-be system implementor can find fuller coverage of the options available elsewhere.

Now if it had been entitled *Implementing Microsoft Basic* (or even Basics), that would have been a different story...

Richard Forsyth

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# COMCAP

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## PROGRAMMERS

Our client is a well established highly successful group of companies whose products are household names throughout the UK. As you would expect the commitment to continued development of massive computerised systems is total and on-going and their D.P. centres are both multi-disciplined and well structured. To keep abreast of their development plans they are now looking to recruit Programmers to work on various project teams with the following skills:

### SENIOR PROGRAMMERS

Should have at least 4 years COBOL experience utilising structured programming techniques with both CICS and DL/I (or RAMIS).

### PROGRAMMERS

There are also opportunities for programmers who have a sound IBM background in COBOL, with both the ability and desire to be trained in both CICS and DL/I.

Starting salaries will be between £8 - £12,000 depending on experience, plus a generous and comprehensive benefits package which includes relocation. Ref: P187

## PROGRAMMERS (At all levels)

Our client is one of the foremost organisations in the UK, whose interests are both diversified and International. Their D.P. department is involved in the simultaneous running of over 60 projects, the responsibility for which is divided between a small number of select teams. To increase the potential of these teams they are urgently looking to recruit programmers at varying levels of experience. Although with emphasis on COBOL or ASSEMBLER, CICS and DL/I, the client will also consider other capable candidates — and will offer starting salaries up to £11,000 with a whole range of company benefits. Ref: P215

## BERKSHIRE

Care. (kärin), v. trans. To turn (a ship) over on its side for cleaning, caulking, or repairing; to clean, caulk, etc. Also absol. and fig. 2. trans. To cause (a ship) to heel over 1833. 3. intr. To incline to one side or lie over when sailing on a wind (said of a ship) 1783.

## Career

(- Fr. *carrière* - It. *carriera* - Pr. *carreira* - Rom. *\*carraria* (sc. via) carriage-road, road, f. *carrus* CAR.)  
1. A race-course; the space within the barrier at a tournament. Also *transf.* -1761.  
2. Of a horse: A short gallop at full speed. Also a charge, encounter. -1704. Also fig. 3. Hence, A (swift) running, course, as of the sun or a star through the heavens. *abstr.* Full speed, impetus. 1534. Also fig. b. *Hawking.* A flight of the bird 1727. 4. A person's course or progress through life (or a distinct portion of life); so of a nation, a party, etc. 1803.

2. Mortal combat or career with Lance MILITARY 1788. 3. The Sun's career. 1803.

Bearing this simple but accurate definition in mind, we have selected these four developing IBM installations. For further details telephone our Recruitment division and ask to speak to one of our consultants.

## SENIOR POSITIONS

One of the UK's most progressive financial institutions, a subsidiary of a large international banking group are currently at the development stage of several medium and large projects. As a result they are now urgently looking to recruit senior personnel who will play a major role within the development group, for which a good understanding of the following skills will be necessary.

## ANALYSTS

A background with large financial or accounting applications is essential preferably utilising IBM Tandem mainframes.

## PROJECT MANAGER

The ideal candidate must be able to demonstrate the ability to manage large project teams, utilising on-line techniques preferably in a financial or accounting environment.

These senior positions will command a high starting salary depending on experience, and a benefits package you would expect from a large and successful company. Ref: P194.

## MVS SOFTWARE SPECIALISTS EUROPE/USA

This inventive and expanding IBM Systems Software House have won several (ICP) awards for their software products. They are now looking to substantially increase their market share both in Europe and the USA. To achieve this they require top level MVS Systems Programmers to work in their product support teams. Selected candidates will have the opportunity to work in the UK (Herts), Germany, or the USA, and can expect a starting salary of not less than £18,000. Ref: P213

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Ongoing Analysis and/or System Design skills are required by this leading company. The environment is sophisticated IBM and candidates, apart from being self-motivated with good interpersonal skills should have experience with ON-LINE and DATABASE systems using PL/1 on Cobol.

### INTERNATIONAL BANK

**PROGRAMMING** to £11,500  
Become involved in the development of a comprehensive new international banking system. Our clients offer unparalleled opportunities for bright, young programmers with COBOL, DOS/VS, CICS and/or PL/1 experience.

### BANKING

**ANALYST PROGRAMMER** to £12,000  
Depending on your experience, particularly on DEC-based BANKING systems, our client, an international City Bank, require your services. Programmers, who can demonstrate an understanding of BANKING or FINANCIAL applications with at least two years' experience, and the ability to encounter and learn new systems, should apply immediately. A comprehensive BENEFITS package and a pleasant work environment are just some of the points to consider.

### INTERNATIONAL BANK

**RPG PROG./ANALYSTS** to £13,000  
This prestigious financial organisation require several people with a minimum of 18 months' RPG II experience. Preferably you would have gained this in a banking environment together with some exposure to analytical duties. Normal banking benefits apply after three months' qualifying period.

### MAJOR OIL COMPANY

**SENIOR ANALYST** to £13,500  
This company, the leader in its field, require an Analyst with proven supervisory skills, to lead a professional team working on On-Line COBOL and Database projects. Emphasis will be placed on analytical and user liaison skills with every opportunity for further advancement.

### MAJOR MANUFACTURING CO.

**HP PROGRAMMERS** to £10,000  
Develop your programming skills towards an analytical role in a progressive On-Line environment with a company undergoing major new developments, planned into the mid-80s. Ideally you should have two years' solid COBOL programming experience with some exposure to HP utilities such as QUERY, VIEW, IMAGE or RAPID.

### INTERNATIONAL SOFTWARE HOUSE

**EUROPE & U.K.** to £12,250  
Our clients will train you in Consultancy techniques if you have 18 months' PL/1 experience coupled with an On-Line and Database background. You should be willing to work abroad, and ready to learn new programming methods, as training is always given.

### ELECTRONICS

**COBOL, BASIC+, +2** to £9,500  
A vacancy has arisen within a manufacturing firm for PROGRAMMERS or ANALYST PROGRAMMERS with a minimum of 18 months' experience. Knowledge of RSTS/E or VMS on VAX is desirable but just as important is the candidate's attitude towards RESPONSIBILITY as the post requires self-motivated and articulate individuals capable of dealing with USERS and able to work under a minimum of supervision.

### LIFE ASSURANCE

**PROGRAMMING & ANALYSIS** to £13,000  
This company, heavily committed to effective information processing and due to continual development, require further staff. IBM COBOL and On-Line experience, particularly if allied to team leadership, would be especially appropriate.

### MANUFACTURING

**SENIOR PROGRAMMERS** to £10,000  
Programmers or Analysts with a background in a COMMERCIAL environment will find their skills rewarded in this well-known KENT-based company. Working both with ICL and HP hardware, this could be the next CAREER MOVE for candidates who feel their skills and talents are unrecognised in their present posts. There is plenty of room for expansion within this company.

### INDUSTRIAL

**PROJECT RESPONSIBILITY** to £11,000  
Our clients are looking for Analysts with a flexible approach and three years' Analyst experience with ability to encounter and learn new systems. Effective communicators are needed for the development of Financial and Marketing Systems.

### CONSTRUCTION

**ANALYST PROGRAMMERS** to £9,000  
ICL ME20 experience is a must. Our client is a well-known company currently seeking COBOL Analyst Programmers. They require mature and responsible individuals willing to undertake development work within a small group. You will need to demonstrate a good applications range and a minimum of three years' experience. A good BENEFITS package is offered in addition to a negotiable salary.

## MIDLANDS

### SOFTWARE HOUSE

**PROGRAMMER/ANALYST** to £9,000  
A Programmer/Analyst is required with good DEC PDP-11 experience, probably using BASIC+ with the RSTS/E operating system. Experience in a software house, or project management in a manufacturing environment would be considered ideal.

### MANUFACTURING SYSTEMS

**ANALYST/PROGRAMMER** to £9,000  
BASIC experience on any type of minicomputer is required by this thriving Systems house. Experience of writing bespoke packages, or in the manufacturing environment would be most suitable.

### CONSULTANCY

**GSD SYSTEMS** to £ Neg.  
Do you have Programming or Analysis experience using RPG on a System 34, or 38, and wish to move into a consultancy role? Our clients offer the opportunity to obtain experience of the new IBM GSD machine, when it is released.

### MAJOR INDUSTRIAL

**ANALYST** to £9,000  
If you are an experienced Analyst, with some programming ability, here is your opportunity to join a new division of an international Manufacturing Company. Our clients are looking for a key member of an existing new project and can offer excellent scope for development.

*TCR are always keen to hear from Systems and Programming staff with Commercial experience who are looking for a change of environment. Contact either office for an informal and confidential discussion.*

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(3371)

Our client, a leading international Bank, is seeking to recruit experienced and self-motivated professionals to work within the areas of Technical Services and Support. The technical environment consists of multiple 3033's and 3083's in their U.K. and European centres, linked to a worldwide network. Systems software includes VM/SP, MVS/SP and JES 2. The VM environment supports program development with CMS, Electronic Mail and Colour Graphics applications.

As a result of expansion within this busy and dynamic department, vacancies have been identified with four important areas.

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### TECHNICAL ANALYST

Working within this challenging area, the successful candidate will be involved in the interface between applications development, systems programming and production areas, to ensure the successful evaluation, installation and support of advanced software products. Primarily these are usability and productivity aides including Electronic Mail, Operational Control Aids, Change and Problem Management and Computer Based Training, with new products planned for 1983.

Applicants must be able to offer technical support/systems programming background, with proven knowledge of VM and its interaction with MVS, JES, VM Pass-thru and RSCS. Also essential is experience of VM Exec language, and the use of VM/CMS as a development tool. It is anticipated that you will be able to install software packages, will be used to a high level of user liaison, and will be able to demonstrate report-writing abilities.

### VM SYSTEMS PROGRAMMER

Suitable applicants should have a solid systems programming background, with a minimum of 12 months recent VM experience, preferably gained with a large user. You should be able to demonstrate a sound knowledge of VM Internals, plus experience of de-bugging system dumps, performing system generations, problem solving and the applying of fixes. Knowledge of Assembler language and the ability to use CMS are prerequisites for this position within a highly-skilled team supporting VM for the European Data Centres in Croydon and Frankfurt.

### TELEPROCESSING SUPPORT

Suitable candidates will have spent a minimum of 12 months within an IBM Systems Programming environment. It is anticipated that you will be aware of the functions of a large T.P. Network, with knowledge of such products as NCCP and NPDA being a further advantage. Some experience of programming is necessary, particularly Assembler or CMS, but more importantly you will have the drive and enthusiasm to identify and resolve the technical problems generated by a network of IBM based terminals distributed throughout Europe.

### CAPACITY PLANNING

A requirement has just been identified within our client's Capacity Planning section. A broad knowledge of IBM software is required, with experience of at least one high-level language. Experience of SAS would be ideal, but training will be given where necessary. The job will involve a high level of information gathering/reporting, and is an excellent opportunity to enter this varied and interesting field.

For an early interview please call Andy Beacham on 01-734 7394 (office hours) or 01-223 8507 (evenings and weekends).

(3371)

## LOOK TO THE FUTURE WITH



BL Systems Limited is a highly successful, independent Systems Company, serving a rapidly expanding Client base, whose activities span the whole spectrum of industry, commerce and finance, including, of course, a large number of BL operating companies. The Company operates on an entirely autonomous basis, selling its products and services at competitive prices and covering a wide range of applications.

The Company's activities centre around premises in Redditch, Worcestershire, which include a large and impressively resourced Communications and Data Centre (CDC). Redditch is a newly developed area, south west of Birmingham, offering a quality, semi-rural environment with reasonably priced housing and easy access to most parts of the country.

The CDC is a modern, purpose-built unit housing an IBM 3033 (16 mb), an Amdahl V7 (16 mb) and an IBM 4341 Model Group 2 (8 mb), which forms the hub of a highly sophisticated network, incorporating a dedicated private microwave network. Extensive use is made of DEC equipment ranging from the 20/20 mainframe, through a large number of VAX and PDP 11 Series minis, to the LSI 11 range of micros. In addition, a wide range of other hardware is used, including CMC, Data General and Wang, together with a variety of other micro computers.

Computer Integrated Manufacturing, Flexible Manufacturing Systems and other leading edge technologies are very much the trademark of BLSL. The network supports a range of high technology products and services with their own dedicated mini computers including VIEWSHARE, a private Viewdata service, COMET, an electronic mail service, COSMIC, a timesharing service, based on ADP on-site, and ARTEMIS, the project management system from Metier.

Plans to further expand the Company's market penetration have created the following vacancies:

### Telecommunications Network Planner – c £12,000 plus lease car

This position calls for the services of a specialist in telecommunications planning. The ideal applicant will have a number of years practical experience of the planning and implementation of data communication networks, incorporating both IBM and DEC hardware.

Main duties will include capacity planning and the design of new configurations within BLSL's package switching network, cost-justifying proposals and liaising closely with BLSL's Clients, the Company's Operations Section and indeed the Marketing Department in the technical qualification of new business prospects.

This senior technical consultancy position will involve a certain amount of pre-sales activity, and once the Client has accepted the proposals, will include the design and co-ordination of the implementation of communications links between the customer and the central BLSL computing resource.

A certain amount of travel, occasionally to Europe, may be necessary.

### Hardware Facilities Planner – c £12,000 plus lease car

This is an excellent opportunity for an accomplished IBM Hardware Technician to join a small, highly skilled Computing and Consultancy Group, engaged in the forward planning of hardware requirements within the BLSL timesharing network.

It requires practical experience of interfacing minis and micros in the field to large scale IBM mainframe installations where knowledge of the various communications protocols and CCITT are highly desirable.

The position will involve a certain amount of Client contact, examining the Client's current and planned configurations and proposing methods of creating interfaces between such configurations and the central BLSL computing resource, with the main aim being to continually expand the services provided by the Company.

A certain amount of travel within the UK may be necessary.

Both of these positions are integral in BLSL's ongoing strategy of expansion and offer a high degree of variety and challenge. Terms and conditions of employment associated with these positions are excellent and include a low cost leased car, bonus system and 25 days holiday, together with an attractive relocation package where applicable.

For further details of these positions, please contact Ian Payne on 021-236 3761 (24 hour answering service) or at home on 0827 58002 (evenings and weekends until 9.00 pm). Alternatively, please forward a detailed c.v. to him at the Birmingham office.



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Manchester M3 2ER  
061-553 0427

**BELGIUM**  
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Belle 4, 1050 Brussels  
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(3294)

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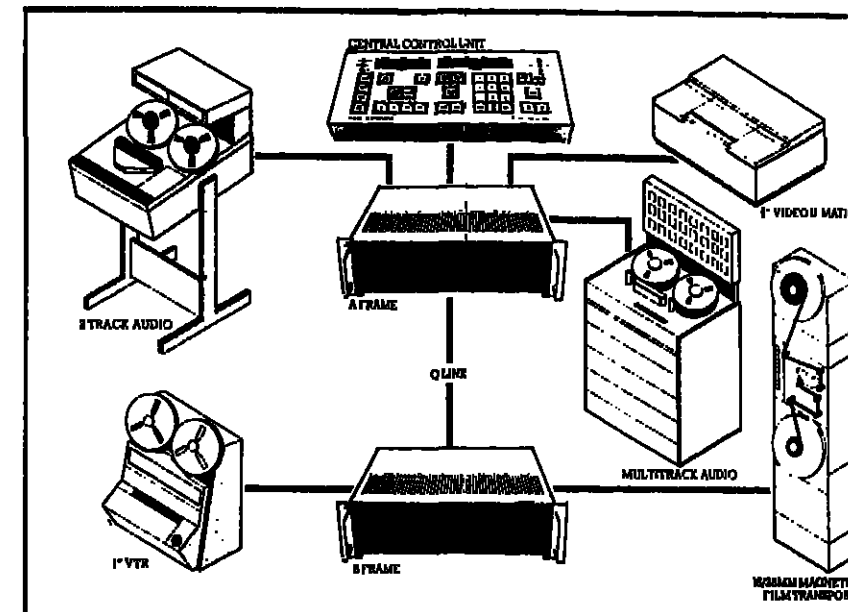
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Ideally two types of engineers are sought, one with a bias toward digital hardware design, servomechanisms and control systems, the other with a strong software background including ASSEMBLER and PASCAL and, ideally, MDOS, CP/M, OS9 or UNIX. The Motorola 6800 and 6809 micros are currently being used so this experience is very desirable. A background from the audio, video or film tape recording business would be perfect. However, applicants from the machine/process control industry would be suitable, particularly if work has incorporated ICE techniques and multiprocessor networks. The environment is one of Research and Development, so a preference for this type of 'atmosphere' will be satisfied. There will be the opportunity for foreign travel to the company's Hollywood subsidiary and customers' sites worldwide.

Contact David Wallder

CW63

(3348)

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Berkshire

Our client, a leading manufacturer of Industrial Control Systems is currently undergoing a major expansion into new market areas and this activity has created a number of key positions within the company. Successful applicants will be involved in a number of projects leading to the development of a new generation of Control Systems which will reinforce the client's current market strength.

Software Engineering Manager  
Negotiable to £16,000

Previous software management experience in Process Control or a related field is an essential qualification to enable the successful applicant to lead a high powered team of experienced engineers.

Systems Design Engineers  
Negotiable to £14,000

Experienced Systems Designers with a background in PDP-11 series mini-computers and with particular knowledge of RSX-11M and/or VMS operating systems are required. An understanding of Macro-Assembler and Fortran programming languages would be an added advantage. It is anticipated that suitable candidates will be graduates with at least four years experience in systems design.

For both positions some short duration business trips will be necessary. The competitive remuneration packages include a contributory pension scheme and free BUPA.

Please contact: Jim Wallis.

Ferguson Thorley Bowles  
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## CONTRACTS

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## PRODUCT SUPPORT

CONSULTANT £12,000-£15,000 - CAR - BONUS  
The Product Support Department is responsible for the pre- and post-sales support tasks of demonstrations, training and customer advice. As a new department it must also produce quality documentation, course and seminar material, and expand to provide product installations.

The individual capable of meeting this variety of requirements must have a sound IBM technical background (including programming and analysis); be an effective communicator; and understand business and user needs. The successful candidate will be interested in fourth generation language products.

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DMW Inc. was founded in 1971 in the U.S.A. Database Design International Inc. was founded in 1979. These two companies, together with their European counterparts which are European owned, form the DMW Group with locations in London, Amsterdam, Ann Arbor, Bermuda, Milan, Rome, Singapore, Stockholm, and Sydney.

## PRODUCT DEVELOPMENT

The Product Development Department is responsible for the enhancement, design and development of DMW's Fourth Generation language products. These individuals will be involved in the development of advanced features, new versions and will form part of our highly skilled team.

SYSTEM SOFTWARE ENGINEER UP TO £16,000 pa  
The successful candidate will have at least 4 years experience of IBM systems programming or product development in ASSEMBLER. Knowledge of MVS, OS, experience of DLI, CICS or IMS/DC and an interest in the development of fourth generation technology is necessary.

PROJECT LEADER UP TO £14,000 pa  
The individual will have had at least 4 years computing experience in an IBM environment.

developing systems in Cobol or PL1. Systems/data analysis and team leading would be an advantage. He/she will be responsible for development projects involving a specialist team working on advanced features and versions of our products.

ANALYST/PROGRAMMERS UP TO £12,000 pa  
Will have at least 3 years experience of IBM system development on Cobol or PL/1. To work in a small professional team involved in product development and fourth generation language application.

Positions include a flexible pension scheme, health insurance, generous benefits and overseas travel.

Please send your resume to: Maryjo Scriveni  
Product Support Manager, The DMW Group Europe  
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(3390)



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# SYSTEMS SOFTWARE DEVELOPMENT

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- INTEL 8086 SYSTEMS PROGRAMMING
- LOCAL AREA NETWORKS
- IBM SNA NETWORKS ● X25 NETWORKS
- COMMUNICATIONS HARDWARE
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Your experience should cover working on Microprocessor development and software development on complex products.

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Software Engineers with several years experience, interested in working on either Word Processing or Office Automation Systems.

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Alternatively if you have an interest in Office Automation Systems, particularly in designing and implementing Electronic Mail Packages or Data Storage and Retrieval Systems and you have a sound knowledge of VAX VMS and PL/1 or Intel 8086, you could equally be the person we seek.

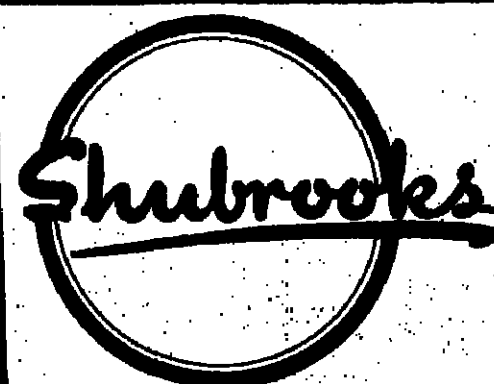
### Benefits

All of these positions carry very attractive salaries with a benefits package that includes a company bonus scheme and full relocation expenses, with the added advantage of some of the country's least expensive housing in one of the most picturesque areas.

If your experience matches any of our needs and you would like to work with the market leaders, please write with full personal and career details to: Personnel Department, Systime Limited, Millshaw Park, Leeds LS11 0LT, or call VIC MARCH or TONY DENSON on Leeds 702277.

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IBM United Kingdom International Products was recently set up to head the launch of the IBM Personal Computer into Europe. One of its main activities is the acquisition and publishing of software. We are now looking for more experienced men and women to join our software group, which is based in Feltham, Middlesex, with a small additional unit in South Hampshire.

### Software Acquisition and Development

You'll join a team evaluating opportunities for IBM to acquire, publish and market software packages for the IBM Personal Computer. Your work will be extremely varied, covering a wide range of applications, and will involve close liaison with our companies in the US and Europe.

Ideally a graduate, you should have in-depth experience of a number of microcomputers and their software. Probably you will have been involved already in software selection or marketing and you will have worked extensively with end users of microcomputers and software development companies.

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You will work on the preparation of hardware and software publications for the IBM Personal Computer. This will involve writing and preparing manuscripts and artwork, often to very demanding timescales. Some travel in the UK and Europe may be necessary.

You should be qualified to at least 'A' level English with a City & Guilds certificate in technical authorship. In addition, you should have a minimum of 5 years' experience in the computer industry. The ability to explain technical operations in clear English—often for first-time computer users—is essential.

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To £15K

East Anglia

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Our ICSS are based on distributed micro-computer and PCM/TDM digitalised speech techniques. These technologies are blended into a highly innovative design architecture which has become the world market leader in the field.

To support the continued development of our capabilities in Communication Technology we require a number of Professional Development Engineers plus Systems Applications Engineers. These appointments will be based at our new R&D facility near Basingstoke.

### Microcomputer Development Engineers

Appointments are available for Senior Development Engineers and Development Engineers with proven ability. Applicants should possess a good degree or HND plus minimum of four years experience for senior appointments, two years for more junior roles. Your experience may include 8086/280/8051 Hardware and familiarity with structured software design techniques. Languages may include PL/Z, PLM, PASCAL and Assemblers. Additionally, experience covering DEC VAX/VMS, RMX80 and local area networking would be advantageous. Ref: K059/01.

### Digital & Analogue Development Engineers

Appointments are available for Senior Development Engineers and Development Engineers with proven ability. Applicants should possess a good degree or HND plus minimum of four years experience for senior appointments, two years for more junior roles in the fields of digital and/or analogue hardware design. Your experience may include micro-computer hardware design (8086/280/8051), TTL/IC LSI/MOS digital design, analogue techniques, filters, line and telephone interfaces, power supplies and P.M. digitalised speech techniques. Ref: K059/02.

### Systems Applications Engineers

In this role responsibilities will cover the system design activities associated with specific customer requirements. This will include the configuration of systems from both hardware and software modules starting from system proposal right through to commissioning and on site acceptance. You may also be involved in the development of Computer Aided System Design and support packages.

Applicants should be qualified either to degree or HND standard with a minimum of two years systems experience. Appropriate experience areas would include communications switching systems, processor controlled telephone systems, mobile radio systems, computer based process control systems. General experience in micro/minicomputer systems and circuit design familiarity would also be advantageous. Ref: K059/03.

For all the above appointments please send detailed cv, or telephone Ian Gregory, Senior Recruitment Officer, IAL, Aeradio House, Hayes Road, Southall, Mids., UB2 5NJ. Tel: 01-774 5134. Please quote appropriate reference.



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(3214)

### UNIVERSITY OF OXFORD UNIVERSITY LECTURERSHIPS IN COMPUTATION

Applications are invited for four University Lectureships in Computation, available from 1st October, 1983. These appointments will be made under the University Grants Committee's scheme for financing a number of additional information technology posts in universities.

It is intended that these appointments should be held in conjunction with a college fellowship. Further particulars of the university lectureships, and of relevant college posts, may be obtained from: Professor C. A. R. Hoare, F.R.S., Oxford University Computing Laboratory, Programming Research Group, 8-11 Keble Road, Oxford OX1 2JD. Telephone Oxford (01865) 51414, to whom applicants may send typed copies, or one from overseas applicants should be sent. (Separate application is not necessary for an associated college post). The closing date for the receipt of applications is 11th May, 1983.

(3277)

## Analyst/ Programmer System/38

We are leading fashion retailers with 90 branches in the UK and Europe and have a progressive approach to computing. Due to future development requirements we are installing a System/38 and now require an Analyst/Programmer with a minimum of 3 years RPG experience and a good record of project implementation. System/38 experience is desirable but not essential.

The appointment offers a salary negotiable £9,000 p.a. in line with experience, and the usual big Company benefits. For an interview please ring Colin Ball on 01-450 8989 (outside office hours 01-452 6881) or write to the D.P. Manager, Wallis Fashion Group Ltd., Clarendon Road, Cricklewood, London NW2 1SY.

# wallis

(3201)



# CONTRACTS

## DEC

PDP11 RSX11M RTL2 PROGRAMMERS  
AIMS PROGRAMMERS  
VAX VMS COBOL PROGRAMMERS  
VAX FORTRAN PROGRAMMERS  
VAX VMS OR RSX11M CORAL 66 PROGRAMMERS  
VAX VMS SUPPORT PROGRAMMER WITH COMMS EXPERIENCE  
VAX INTEL 8080 CORAL 66 SOFTWARE ENGINEERS

## IBM

OS CICS COBOL PROGRAMMERS  
IMS DB/DC COBOL ANALYST/PROGRAMMERS  
MVS IMS DATABASE ADMINISTRATOR  
SYSTEM 38 RPGIII PROGRAMMERS  
SYSTEM 38 RPGIII ANALYST/PROGRAMMERS - LUXEMBOURG  
ADABAS NATURAL PROGRAMMERS  
DOS VSE CICS DLI VTAM SYSTEM PROGRAMMERS  
8100 DPCX PROGRAMMERS AND DESIGNERS (VARIOUS)

## OTHER

TANDEM NONSTOP 2 SYSTEM PROGRAMMER  
UNIVAC FORTRAN PROGRAMMERS  
UNIVAC 1100 DMS COBOL PROGRAMMERS - USA  
BURROUGHS GEMCOS DMS11 ANALYST/PROGRAMMERS  
MOTOROLA 6808 ASSEMBLER PROGRAMMERS  
HONEYWELL DP56 COBOL PROGRAMMERS  
CORAL 66 (DEFENCE) PROGRAMMERS  
TI 990/10 DXT10 COBOL PROGRAMMERS  
MICRO (CPM) SUPPORT/CUSTOMER LIAISON  
HP 3000 IMAGE RAPID COBOL PROGRAMMERS  
PRIME/FORTRAN SENIOR ANALYST/PROGRAMMERS - KUWAIT  
TECHNICAL AUTHORS - NUMEROUS

## ICL

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VME 2900 SUPPORT PROGRAMMERS  
SYSTEM 25 PROGRAMMERS  
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(3324)

## your appointments register

### Sales Executives/Managers

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Computer bureau experience required, selling a wide range of mini and micro based solutions.

**Nationwide** £16,000 package

To sell computer related equipment/electronics to industry, banks and scientific research establishments. Experience of micro processor base equipment or data communications particularly useful.

**SW London** £18,000+

Selling technical software and engineering consultancy services.

**Kent** £18,000+

Technical sales experience required, communications systems of particular value.

**SE England** £25,000 package

C.O.M. experience of particular relevance, to sell hardware and associated software.

**Middx.** £30,000 on target

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**Edinburgh/Staines** £23,000 on target

Experienced in selling small (micro or mini) computers preferably as turnkey systems and preferably to small companies, professional offices or lone traders.

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(3308)

## Assistant Data Processing Manager

### South Coast

Norsk Hydro Polymers Limited are major manufacturers of high quality PVC polymers and compounds, with a turnover in excess of £70m. A subsidiary of a decentralised multi-national group employing some 1000 people in three sites in the UK, the Company's administrative headquarters are in Havant, Hampshire, where a factory has been established since the early 1980's.

We now require an Assistant to the Data Processing Manager at our Head Office in Havant, where a DEC PDP 11/44 is currently installed.

A knowledge of PDP 11 running under RSTS/E, and programming in Basic+ is essential. Previous experience or knowledge of data communications and remote terminal operation would be a distinct advantage.

Our modern offices are located in a pleasant part of South Hampshire close to the attractions of the South Downs, Portsmouth and the coast, yet only 50 minutes from London. A most attractive salary, reflecting the importance of this key post in the Company's future data processing strategy, will be offered to the candidate with the required experience and ability. Benefits include a generous pension scheme and assisted BUPA membership. Interested men and women should apply in writing with a full c.v. to Olivia Hughes, Norsk Hydro Polymers Limited, New Lane, Havant, Hampshire. Tel: 0705 486350.

**Norsk Hydro**  
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Reporting to the Senior Programmer/Analyst you will be responsible for the day-to-day maintenance of our software as well as assisting with the design and development of new projects. Applicants should have a minimum of 2/3 years' COBOL experience, be aged 23-35 and a knowledge of Data General equipment and database systems would be an advantage.

You will be looking for career advancement, be self-motivated and enjoy working with a minimum of supervision. Starting salary will be circa £7,500 plus other benefits normally associated with a large international organisation.

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### Programmers

NCR/IBM/COBOL to £14K  
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COBOL/FL1/OS/CICS/IMS to £13K  
Commercial H. Counties - Midlands - Manchester

ME29/IDMS to £10K  
S.W. London

HONEYWELL to £12K  
Systems Programming experience Middlesex

DEC/HP/WANG/DG to £12K  
Basic - Cobol Berks - Surrey

IBM/RPG2 to £12K  
Financial/Insurance Home Counties

IBM to £16K  
System exp. Essex

ICL/VMEB or K to £11K  
Financial Surrey

IBM/UNIVAC/COBOL to £12K  
On-line/Databases Surrey

NCR 8200 to £14K  
Financial SW LONDON

### Analyst/Progs

BURROUGHS/COBOL to £14K  
Commercial Surrey

IBM 34/38 to £15K  
London/Home Counties/North

DATA GENERAL/COBOL to £11K  
Commercial Mini experience London

IBM/COBOL to £10K  
Scotland

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### Systems Analysts

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Stock Control/Commodity Control London

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IBM/BURROUGHS to £15K  
Commercial Accountancy London/Surrey/Manchester

IBM to £15K  
Insurance/Financial W. Sussex

ICL/ME29 to £16K  
Commercial Design Berks.

IBM SYSTEM 34/38 MAAPICS to £13K  
Sussex

### Software Engineers

CORAL/PASCAL/MASCOT/C to £13K  
Communications Glouce/Hants/Sussex/Midlands/Manchester

FORTRAN to £12K  
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MILITARY SYSTEMS/RADAR to £11K  
Coral - Mascot Hants/Surrey - Essex - S. West

PDP/VAX/INTEL to £13K  
Telecomms - ATE Surrey/London/Kent

COMMS/TELECOMS/MOD to £14K  
Mini/Mainframe E. Anglia

HP3000/INTEL to £12K  
CAD/CAM/ATE Home Counties

TERMINAL EMULATORS to £15K  
C/Assembler London

### Snr Appointments

PROJECT LEADER to £15K  
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TEAM MANAGER to £17K  
Computer Modelling S. London

ICL/PRE- AND POST-SALES SUPPORT to £16K  
Berks.

SENIOR SOFTWARE ENGINEER to £18K  
Software capabilities/Technical consultant E. Anglia

**Logistix**

Logistix Recruitment Limited  
10 Grenville Place, London SW7 4RW

Telephone 01-373 3063

## Systems Designers/Progs

S. Home Counties: Salaries to £15K

A series of newly won contracts, gained by a rapidly expanding Systems and Software House, has given rise to a number of vacancies for Systems Designers. Ideally, applicants should be between 26 and 32 years old and hold at least one degree in Computer Science or a numeric subject. Industrial experience must have been gained in a real-time environment and candidates should have participated in the design and implementation of complex technical or systems software. Fluency in PASCAL, FORTRAN and an Assembler is essential, with preference being shown to those with knowledge of DEC or Modcomp hardware. As our Client's current projects include the design and development of communications networks, graphics and interactive terminal systems, experience in any of these fields will be welcomed. Ref: L/16/A

## VAX/Fortran Programmers

Central London: Salaries to £12K

An International Publishing House has recently established a subsidiary to develop FORTRAN and VAX environment. Experience of information retrieval and file handling is of considerable advantage for certain positions whilst Designers should have participated in the design and implementation of an on-line database system. Ref: L/16/B

## Recent Graduate? Interested in Comms?

Central London: Salaries to £10K + Benefits

A leading Systems House/Consultancy has retained Logistix to assist with the recruitment of several Designers and Programmers to form new project teams in the field of communications systems development. Projects are currently being undertaken for clients in the UK, France, Benelux and Switzerland, so opportunities for travel will arise. The applications involve the design of communication networks, network gateways, message switching systems and interfaces to Teletex. Clients range from large commercial organisations to communications service providers.

**SOFTWARE DESIGNERS/PROGRAMMERS:** With a good numeric degree and at least two years' experience in industry, you will ideally have some knowledge of a proprietary networking system, e.g. SNA or DECNET and communications protocols. You should have experience with block structured languages and, ideally, also an Assembler.

**GRADUATE PROGRAMMERS:** With a good numeric degree and at least six months' experience in industry, you will probably be making your first move. Some knowledge of communications would be useful but more important is a desire to gain experience in a technically demanding environment. Knowledge of a language such as PASCAL or 'C' is desirable.

The Company is recognised as a market leader in innovative software development, particularly in communications and provides a well-defined career path for the technically motivated individual who also wants to work in a friendly atmosphere.

**BENEFITS:** The Company offers an excellent benefits package consisting of health and medical schemes.

**APPLICATIONS:** Please submit a well documented resume or alternatively telephone one of our Consultants quoting Ref: LJ5/2.

## C & Unix Programmers

London: Salaries to £10K

A highly respected Product Supplier is currently seeking to recruit several Systems and Applications Programmers to work on its UNIX-based range of products. Applicants, aged 22-26 years, should have graduated since 1980 with a good class honours degree in a numeric subject and have at least one year's commercial or industrial experience. Very recent M.Sc. or Ph.D. candidates are also encouraged to apply, particularly if their chosen subject matter was directly concerned with UNIX systems software. It is advantageous to be fluent in 'C' programming language and also offer PASCAL as a secondary language. Ref: L/16/C

## Technical Authors

Italy: Salaries to £11K + Overseas Allowance

An internationally renowned Systems and Software House is currently seeking additional Technical Authors for permanent career positions in Italy. Suitable applicants should have a good educational background and at least 18 months' experience in the design and writing of User documentation for either a software or hardware product. A good command of the English language is essential as is the ability to communicate with both technical and non-technical personnel. Applicants who have participated in the production of a manual for end-users of an Office Automation System will be of particular interest to our Client and will attract a salary premium. Knowledge of Italian would be an advantage but it is not a pre-requisite for these positions. Ref: L/16/D

## Real-Time Programmers

Central London: Salaries to £9.5K

A leading Systems House and Consultancy is currently seeking to recruit additional Real-Time Programmers for its Central London Head Office. Suitable candidates should hold a numeric degree and have at least 12 months' subsequent software programming experience in an industrial environment. Your programming skills should preferably include fluency in one or more of the following: PASCAL, C, FORTRAN, CORAL 66 or Assembler. Hardware experience is less important, but if you are currently working in a development role on PDP-11/VAX, Intel 8080/8 or Motorola 6800/68000 you will attract a salary premium. Opportunities for career development are excellent and depending on your background and career aspirations you will be considered for the posts of Communications, Process Control, Robotics or Defence. Ref: L/16/E

Discussed by D.C.E.

L/16/F



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These positions will be of particular interest to experienced systems software support professionals with experience of the technical practicalities associated with building a multi-system network. Our eventual aim is to link all of the processors within the facility encompassing wide and local area networks within a recognised Systems Network Architecture. To qualify for the positions you should be fully conversant with the internals of VMS from a systems programming point of view or additionally be fully conversant with VAX architecture and have experience of linking and interfacing to current communications protocols.

To discuss these positions in greater detail, please telephone our Advising Consultant, Roger Dorriott on 01 935 0671 (24 hour answering service) or 01 870 0462 evenings and weekends 7.00-9.00pm. Alternatively, please submit your Curriculum Vitae to him at our London office. Relevant candidates are assured of a prompt and confidential interview with our Client.

#### VAX OPERATIONS SUPPORT TO £9,500

This position is well suited to an experienced Operations Supervisor from a multiple machine environment. The position entails day-to-day responsibility for three more junior personnel as well as the maintenance of back-up procedures, systems documentation and supply levels. We would particularly welcome an individual with a technical interest in systems software and current computer hardware.

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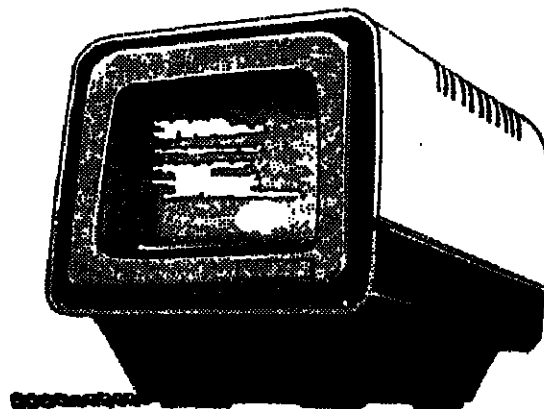
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## Electronics Development

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Although it may seem an obvious statement, technology - no matter how advanced - depends on the skills of the men and women involved in its development. That's why we at Gresham Lion place such a high value on the contribution made by our close-knit totally professional engineering teams; as lead contractor to MOD for sophisticated submarine weapon control systems, quality is all-important. Now we require additional Engineers aged 23-40 for junior and senior posts; take a look at the following career opportunities, which are located at our Feltham and Hook establishments.

**Software Design Engineers.** To work on development projects - MOD contract experience will be an advantage. You'll need microprocessor development



experience, preferably using structured programming methods, INTEL 8086 ASSEMBLER and CORAL 66 (12 months' minimum experience).

**Systems Engineers.** With 6-7 years' experience to handle new and existing projects, co-ordinating the work of several project teams, liaison with contractors and MOD on system performance, interfaces, operational aspects and trials. The positions are at senior engineer level and involve considerable customer contact.

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In all cases, salaries are attractive and there is a good benefits package which includes flexible hours, a contributory pension scheme with free life assurance, generous holiday entitlement, relocation assistance and a staff restaurant. If you are confident in your ability and would like to know more, please contact:

Richard Hancock, Gresham Lion Plc, Gresham House, Twickenham Road, Feltham, Middlesex. Tel. 01-894 5511. (Out of hours call 01-898 7177)

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Our client, a light engineering company with a turnover of c £12m in the electrical industry and part of a major group, is seeking to appoint a Systems Manager (Designate).

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The successful applicant will be expected to take full control of the Systems Department within two/three months of appointment and be responsible for:

- Maintenance and control of existing activities.
- The continuing implementation of Stock Control Systems.
- Leading the introduction of further developments including Shop Floor, Job Recording and Time Attendance Systems.

Applicants must offer at least two years' experience of mini computers in a varied industrial environment and be fully conversant with BASIC. A knowledge of Production and Stock Control systems is very desirable.

The salary, negotiable up to £11,000, is augmented by the company's bonus scheme and assistance with relocation expenses will also be offered if appropriate.

Please telephone or write to DP Selection Services quoting reference W4211.

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Ideally, candidates will have two to three years experience in systems analysis and design and will probably have seen more than one project through from

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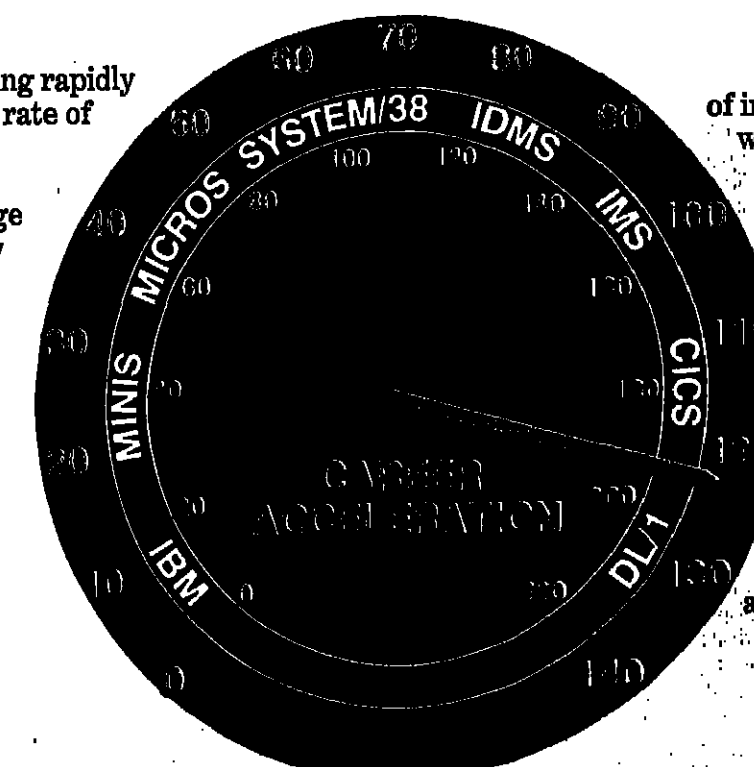
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to £10,500

The computing industry is changing rapidly and experience suggests that the rate of change will accelerate.

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Our client, a major British Company which is playing a leading role in shaping the future of computing in the U.K. offers this and more.



Currently they are providing users in a variety of industries with well designed computer systems which utilize both IBM and ICL mainframes and a variety of minis and micros. Database and t. p. software are extensively used e.g. IDMS, IMS, CICS, DL1.

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Instrumental to the success and growth of the company has been its policy of providing a continuous program of career development for its staff with regular training and promotion reviews. Assistance with relocation expenses will be given where appropriate.

For more details, please telephone Andrew Cousins or write enclosing a full C.V.

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Our Client, backed by one of the worlds largest high technology engineering Companies, designs and manufactures a range of fully compatible mini computers. These high performance systems, which have differing capabilities and performances, sell in the range of £10,000 to £100,000 plus.

Recently the Company has strengthened its traditionally strong involvement in the engineering, scientific, education, communication and defence markets by extending its 32-bit range of computers. Complementing their success in selling directly to the end user, the new products are also aimed at systems houses and OEM's where the typical application areas are expected to be in business management, office automation, network communications, automation projects and private viewdata.

With the high level of interest shown in the products, our client now wishes to expand further by recruiting positively motivated Sales Engineers who wish to be part of a very successful team.

To take advantage of this career opening you should be aged 23/30, have an electronics/computer related qualification and technical background, preferably with proven sales and territory management skills. However, you will be given serious consideration if you are currently holding a technical customer support role in the related field and strongly desire a career in sales.

For the Southern based positions - please contact **Peter Dudgeon** on **01 935 0671** (24 hours answering service) or on St Albans 37702 evenings between 8 and 9pm.

For the Northern positions - please contact **Paul Henry** on **061 833 0427** (24 hours answering service) or on 061 793 7151 evenings.

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(3313)

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**To £18,000 London and South East**

Our client, a major systems consultancy part of a Blue Chip group, is looking to recruit senior and junior Real Time, Process Control and Communications specialists to meet its current expansion needs.

With one of the leaders in scientific/technical consultancy, systems design and implementation will be an integral function of your role.

Ideally you will be a graduate with at least two years' related experience in a high or low level language (Fortran, Pascal, Coral, RTL2, Macro or Assembler) with potential to take advantage of the long term career opportunities available. Reference 6787.

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Consultants, Senior Analyst Programmers, Analyst Programmers

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Experience of REAL TIME, ONLINE SYSTEMS is desirable. A flexible approach to problem solving and an open mind in seeking solutions are both essential.

Analyst Programmers will be involved in the analysis and design of modules of

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The more senior roles (Senior Analyst Programmer and Consultant) will become more involved in the management of the project or projects as well as liaison and negotiation with the Client. However they will be expected to retain a technical involvement and must be highly competent in this respect.

All staff members are actively encouraged to extend their knowledge and experience and to take on additional responsibilities, so that they can progress their career and make a larger contribution to the success of the Company's products.

The DATA SYSTEMS DIVISION, based in Chelmsford, comprises of over 200 software professionals and support staff, and operates its own bureau containing some fifteen machines. The Division has made a considerable investment in providing the facilities needed for development of the applications software and support packages necessary to meet the different requirements of Marconi Radar's many clients.

Chelmsford is the County Town of Essex, provides excellent housing, shopping and leisure facilities and is surrounded by beautiful countryside. Access to the coast is easy, yet Chelmsford is only thirty-five minutes from London. If appropriate Marconi Radar will provide generous relocation assistance.

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Surname \_\_\_\_\_

First names \_\_\_\_\_

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Acting for clients, we are looking for competent programmers with upwards of two years' high-level experience. COBOL is the main language used, and preference will be given to candidates with good COBOL knowledge. However, the main requirement is for sound programming experience and ability, and if you have been using other high level languages, we would nevertheless like to hear from you, as our clients would be willing to retrain you.

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# PROGRAMMER

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In return, we can offer a starting salary in the region of £2500, good promotion prospects, appropriate training and normal company benefits. You will also have the advantage of working in attractive new offices in the centre of Hounslow. If you have the get-up-and-go you will need to set the pace with Hertz, send your full personal and career details to Mrs. R. Hales, Personnel Manager, Hertz Europe Limited, Hertz House, 700 Bath Road, Cranford, Middlesex, TW6 9TW.



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Our Client is a prestigious Group Management Services Organisation supporting some 200 companies within the UK and Worldwide - based in South London their current computer facilities include: Twin IBM 4341, DOS/VSE, VM/CMS, CICS/DL1, VSAM, SNA (VTAM, NCP, 3 x 3705 ...), IBM System 34/38, IBM displaywriters, IBM personal computers ... The Company's policy is to be at the leading edge of new technology, and implement new releases of hardware and software as they become available.

The Technical Support Group comprises Software Support Manager and two Systems Programmers. The third and open position requires an individual to specialise in VSE (under VM), CICS and DL1.

Depending upon your ability and experience to date, you may only need 12 months' experience of DOS/VSE systems programming with ASSEMBLER to apply. Additionally, prior exposure to CICS, DL1 and VM will of course be to both your own and our Client's advantage, although comprehensive training will be provided as necessary.

Initial projects will include: In-depth investigation into CICS usage to enable tuning and performance monitoring; major system conversion to utilise DL1; upgrading and support of around 20 other VSE products.

For further information or to arrange an initial interview please contact our Advising Consultant, **Ian Goldsmid** on **01-935 0671** during office hours, or 01-689 6367 some evenings and weekends, alternatively submit your Curriculum Vitae to the London address below.

**SOUTH** James House, 46 James Street, London W1M 5HS 01-935 0671/486 0461

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In addition, major developments are taking place on modem and multiplexer techniques within our Modular Product Group.

As a result positions exist in Reading for Design and Development Engineers at all levels with an immediate need for specialists, both hardware and software, who have gained experience in any of the following areas:

- VLSI
- Micro & Mini Systems
- Media & R.F. Techniques
- Communication Protocols

- Information Storage & Control
- Network Command & Control
- Distributed Computing
- Signal Processing

Salaries will be commensurate with the diverse skills we seek - in a range up to £14K. In addition, the Company offers over five weeks annual holiday, contributory pension scheme and discounted private health insurance. Generous relocation assistance will be offered where appropriate.

If you believe you possess the experience, skill and enthusiasm to contribute to this vital and expanding field of Information Technology and would like some additional technical background then call

Malcolm McConachie - Systems Development or Chris Firth - Modular Development on Reading 594811. Alternatively, write to or call Ian Melrose, Personnel Manager, Racal-Milgo Ltd, Landate House, Station Road, Hook, Hants. Tel: Hook 3911

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If you are fed up with working a night shift, this two (day/evening) shift system could be the answer. You should have two years experience of ICL hardware, using VME/B and (although not essential) George III, plus a desire to use your skill to advance your career, either through technical support or programming. Our client offers good working conditions, stability, full training in all areas (including day release courses) and a substantial range of benefits.

For further information please telephone **Barbara Basquill** on **01-734 7394** during working hours, or **0787-237116** evenings and weekends or send your C.V. to the address below.

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The General Organisation for Social Insurance has recently taken delivery of an IBM 4331 computer running under SSX/VSE.

A Senior Analyst/Programmer is required to lead a small team (4/5) Analyst/Programmers in the development of on-line applications using CICS with VSAM files. The Organisation has, during the last two years, developed a large database of information concerning insured workers on the island. This data is currently being maintained by batch application systems; the delivery of the IBM system will permit on-line access to the database in the first instance. It is planned to move to a database organisation together with on-line data entry, in parallel with the development of further application systems during the coming year.

The successful candidate should be educated to degree level and have an in-depth knowledge of CICS preferably gained in a DOS environment.

Reporting to the Computer Manager the Senior Analyst/Programmer would be expected to both supervise and train an experienced team of Analyst/Programmers in the effective use of CICS software.

An initial 1 year renewable contract would include free accommodation and five weeks' annual holiday together with a contract completion payment.

Applicants should write to the Computer Manager by 6th May in the first instance enclosing details of age, marital status, education, etc together with a brief history of career to date.

General Organisation for Social Insurance  
P.O. Box 5319  
Bahrain

## University of Birmingham

CENTRE FOR COMPUTING  
AND COMPUTER SCIENCE

## COMPUTER OFFICER

DATABASE AND TEXT PROCESSING

Applications are invited from graduates with relevant academic, industrial or research experience for a post of Computer Officer within the User Services Group of the Centre. Candidates must have expertise in Database technology and a knowledge of text processing techniques would be a strong advantage.

Salary will be on either the Computer Officer IA or Computer Officer II scale, starting salary in the range of £5,550-£13,505, plus superannuation.

Further particulars from Mrs. J. E. Butler, Senate Registry, P.O. Box 363, Birmingham B15 2TT, to whom applications (3 copies) including full curriculum vitae and naming three referees, should be sent by Friday, May 6th, 1983.

## COMPUTER PROGRAMMER I.C.L. SYSTEMS 10 and 25

SALARY £8-10K

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Expansion has now created the requirement for a programmer to work on established and new programmes for a Manufacturing and Sales orientated business.

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The ability to work under pressure and to tight time schedules is of the utmost importance.

Please write with full c.v. to:  
Anne Kerr  
Group Personnel Officer  
Sound Diffusion PLC  
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Sussex  
BN3 1RZ



## COMPUTER SCIENTIST

Through our subsidiary company, Robertson Research Engineering Services Limited, we have over the past few years established a leading position in geophysical borehole logging. This is the use of mobile computerised laboratories to record and evaluate formation properties found in exploration boreholes. We are now seeking to recruit a Graduate Computer Scientist to expand further our systems group and therefore facilitate the development of additional real time processing software both for use in the mobile units and at base. The ideal applicant will have a good degree in computer science and one or two years' experience in industry. A good knowledge of Pascal and Programming for Real Time Systems would be an advantage.

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## COMPUTER OFFICER

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(Re-Advertisement)

Applications are invited for the post of COMPUTER OFFICER for the Computer Section of the Welsh Joint Education Committee. The Committee uses an ICL ME 29 running an on-line examination system and the person appointed will be responsible for managing, maintaining and enhancing the system.

The salary will be in the range of PO1/1 - PO1/2 (£9,504-£11,184) and the starting salary will depend upon experience. Applicants should preferably be graduates with experience in the following areas: recent systems analysis, programming in COBOL and working on an ICL ME29.

Further details and application forms (to be returned by May 14th, 1983) may be obtained from the Secretary, Welsh Joint Education Committee, 248 Western Avenue, Cardiff CF5 2YF.

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IBM OS/JCL COBOL CICS - SOUTH COAST - ASAP  
IBM MVS CICS COBOL DL/1 - HOME COUNTIES - ASAP  
IBM OS/VS1 PL/2 CICS - LONDON  
COPICS IMPLEMENTORS - HERTS - ASAP  
HP 3000 IMAGE COBOL - LONDON MAY  
HP 3000 QUERY COBOL - LONDON - URGENT  
DG MV6000 COBOL, TPMS, INFOS - LONDON - JUNE/JULY  
ICL 2900 TPMS CONSULTANT - LONDON - ASAP

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The Laboratory has a vacancy for a person to work with the nuclear physics research group at the Laboratory in the preparation of on-line data collection systems for use both in the Laboratory and for experiments carried out at foreign laboratories. The work is varied and interesting, involving both hardware design and programming of the on-line computers, which at present comprise several DEC 11-23 systems. It will also be necessary for the person appointed to become familiar with the VAX 11-80 in the Laboratory. Experience of one or more of these systems would, of course, be an advantage but applications will be welcome from candidates without such experience but demonstrating adaptability and willingness to learn. Salary will be on either Range 1A (£23,940), or Range 1B (£25,550-£3,095) on the scales for Research and Analogous staff, depending on age, qualifications and experience. Superannuation under the USS Scheme is also provided. The post is funded by the SERC on a "rolling grant". Applications, detailing qualifications and experience (three referees) should be sent to Professor J. M. Reid, The Kelvin Laboratory, Department of Natural Philosophy, University of Glasgow, Glasgow G12 8QQ, by 30th April 1983 to whom further enquiries should be addressed. In reply please quote Ref. No. 4842P.

## PROGRAMMERS

Required for the development of systems and should have experience in IBM, COBOL, CICS and DL/1. Ref 5022. Required for new Honeywell installation at least two years' experience in COBOL, DOS, IDS II and Database. Ref 6004. Our clients, based in South Hampshire, offer comprehensive terms and conditions of employment including relocation expenses where appropriate. Salary negotiable according to experience. Please write giving full details to:  
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## ANALYST/PROGRAMMER

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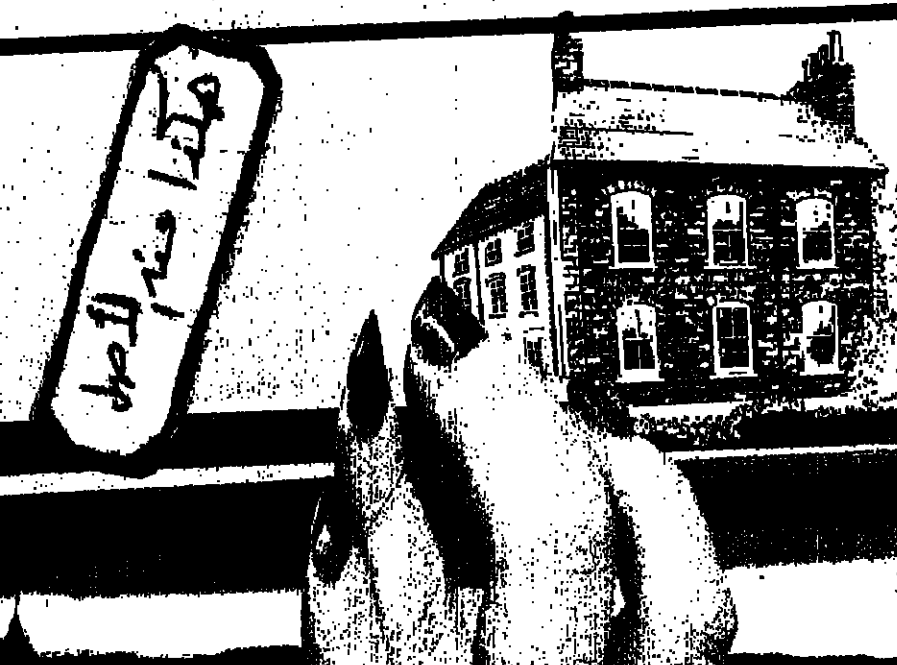
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**INTERFACE**  
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(2363)

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## Programmer/Analyst

The Science and Engineering Research Council is currently reviewing its administrative computing requirements and expects to purchase a number of software packages to meet them. In connection with this the Daresbury Laboratory, one of the Council's major laboratories, situated in the North Cheshire countryside is seeking a programmer/analyst for the Applications Group of its Computer Systems and Electronics Division.

The Laboratory provides major facilities for scientific research undertaken by University research workers from this country and abroad. The computers at the Laboratory include NAS 7000, DEC 4000s, VAX and PDP 11s.

The successful applicant will assist in implementing the packages, in developing links between them and existing systems and in the provision of programming and database support.

The Applications Group supports a wide range of scientific and administrative databases on several different computers and opportunities to participate in these projects will arise.

Applicants (male or female) should have a good honours degree (or equivalent qualification) in an appropriate scientific discipline and a sound programming background. Experience in some aspect of database systems or package implementation, particularly on IBM computers, would be an advantage.

The appointment will be made at Scientific Officer or Higher Scientific Officer level depending on qualifications and experience. The salary ranges for SO1500 are £5,422 - £7,386 and £8,940 - £12,126 per annum respectively.

There is a non-contributory superannuation scheme, a generous leave allowance and a flexible working hours scheme. Some assistance with expenses for house sale and purchase may be available.

CLOSING DATE: 28th April 1983

For further information please write to or telephone Dr. M. Elder on Warrington (0925) 68000 Ext 350.

Application forms may be obtained from and should be returned quoting reference number DL/606 to:

The Personnel Officer  
Science & Engineering  
Research Council  
Daresbury Laboratory  
Daresbury  
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## SYSTEMS ANALYSIS

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Holiday Isle!

We need an experienced Analyst with on-line and accounting background to assist with the implementation of a new accounting package and other associated systems running on an I.B.M. '4341'. The person appointed should have had at least four years' practical experience with an in-depth understanding of DOS/VSE, C.I.C.S., D/I, and some knowledge of PL/I would be an advantage.

## SYSTEMS ANALYST

SO1 £8,658-£9,231

This position is temporary, for 12 months at this time.

Maximum allowance of £250 towards removal expenses payable in appropriate cases. Every assistance will be given in finding temporary accommodation.

For further information please telephone the Data Processing Manager - 0983 524031, Ext. 262.

Application forms and job descriptions from the Personnel Section, County Hall, Newport, Isle of Wight (0983 524031, Ext. 127).

Closing date: May 5th.



## WARWICKSHIRE COUNTY COUNCIL

County Education Department

## CENTRE MANAGER

North Warwickshire Information Technology Centre  
The County Council is sponsoring an Information Technology Centre in Bedworth to serve the Northern area of Warwickshire as part of its programme for minimum school-leavers within the Youth Training Scheme and applications are invited for appointment to the key post of Centre Manager. The Centre will offer up to 12 weeks foundation training in Information technology for 40 unemployed young people.

The appointment will, in the first instance, be for a period of 12 months but will be renewable by mutual agreement subject to satisfactory service and the continuation of the programme. Applicants should have experience in a supervisory or management position in the computing and/or electronics fields together with a knowledge of microcomputers. Experience of dealing with young people is essential. The person appointed will be responsible for setting up, developing and running the Centre. The salary for this position will be at a fixed point of £10,284 or £10,563 or £10,840 according to qualifications and experience.

Further details and application forms may be obtained from the County Education Officer (ref. 87/47) 22 Northgate Street, Warwick CV34 4SR (Tel. Warwick 493431, ext. 2415).

Closing date for applications 3rd May 1983.



Applications are invited from men and women for the post of:

## SYSTEMS ANALYST/PROGRAMMER

(post no: A120)

Grade AP4/5 - £8,573 to £12,325

A new appointment in the City Treasurer's Department, which has been approved in conjunction with the adoption of an ambitious Computer Development Plan.

In addition to ICL 1500 and 7500 series equipment linked to the County Council mainframe (2856/2866), the City Council is about to embark upon a major investment in ICL D.R.S. equipment as part of a five-year plan to provide information technology to all major departments of the Council.

Applicants must be mature 'self-starters' and will be expected to demonstrate in-depth experience in systems applicable to some or all of the equipment in use with the City Council, including on-line, real time and local networks, together with a knowledge of both COBOL and BASIC.

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Further details and application form, returnable by 6th May 1983, from Personnel & Training Officer, Clerk & Chief Executive's Department, Civic Centre, Carlisle CA3 3QR. Tel: Carlisle 22411 Ext: 253, quoting post no: A120.

Box Number

Box number replies should be addressed to:

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c/o Computer Weekly

Quadrant House, The Quadrant

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## BAHAMAS

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Our Client, a major multi-national corporation, wishes to recruit a number of additional systems designers, to assist with developing their series of ME29s being installed. Applicants must have had suitable relevant experience including IDMS and DDS. They should preferably be single or married without children; be self-starting; possess an outgoing personality; be keen to play an active role in a large International DP network; and be prepared to travel world-wide, if required. A knowledge of insurance would be advantageous, but is not considered essential. Two to three year contracts are envisaged, with a possibility of long term permanent employment.

For further information, and a discussion in the strictest confidence, please contact C. D. Stock, General Manager, IFS Group, Lloyds Avenue House, 8 Lloyds Avenue, London EC3N 3ES, telephone 01-481 8183.



## BLACKPOOL BOROUGH COUNCIL

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The Council operates an ICL 2980 computer and is developing new and updating existing systems using on-line terminal facilities as far as possible.

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Applicants should send a recent photograph, curriculum vitae, and the names and addresses of two referees to: Mr C. D. Stock, General Manager, IFS Group, Lloyds Avenue House, 8 Lloyds Avenue, London EC3N 3ES, P.O. Box 1, Blackpool, Lancs. FY1 1NA, by April 28th, 1983.

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Beverly Leonard, The Recruitment Partnership, Third Floor, 61 Park Street, Bristol BS1 1NU. Telephone: Bristol 2727110.

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## LUXEMBOURG PROGRAMMER/ANALYST

c. £21,000 starting early May

Invited with good VAX experience approximately 2 years for 23 years' experience on ATCS. Candidates should be familiar with VAX standard utilities, possibly with PDP 11 background and be conversant with VMS or DOS. Experience of system software development and knowledge of Assembler.

Please send a copy of your CV to: Mr G. E. Moore, Group Finance Director, Kalon Ltd, 513 Bradford Road, Batley, West Yorkshire.

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# Deputy DPM (Designate)

**Five figure salary  
plus car**

**System 38**

**Stratford upon Avon**

Our Client is a multi-national, multi-million pound Group providing specialist, professional services to industry throughout the world. The Company has a prestigious Head Office complex in historic Stratford upon Avon where the Group computing resource is also based. The current configuration comprises a 3 mb IBM System 38 Model 7 running a wide range of on-line/database applications and supporting 25 local screens and 3 remote sites.

The Group DPM now requires a System 38 expert whose brief will be to take over the day to day running of this young, energetic Department. After a qualifying period, the position of Deputy DPM will become available and, in the longer term, promotion to the position of Group Data Processing Manager cannot be ruled out.

Of course, such an exacting role requires a rather special blend of experience and personality.

Technically, our Client cannot consider anyone who does not have proven and in-depth experience of the IBM System 38, where full use has been made of the on-line/

interactive capabilities of the machine and its software. The successful applicant will be a highly experienced Analyst and Designer with a good knowledge of RPG III and demonstrable project management skills.

Personality is equally important as this role will involve front-line user contact and the management of a small team of young d.p. professionals. This is, indeed, an excellent opportunity for a clear-thinking, industrious System 38 expert, with the desire and capability to take on ever-increasing levels of responsibility in a large and highly professional Organisation.

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## JOB OPPORTUNITIES IN GREATER LONDON

THE collapse of the UK's leading IBM software house has made even London software staff draw in breath and cast a cautious eye over the stability of the companies they work for.

The failure of a company like Altergo, which went into receivership soon after Easter through lack of cash and a huge overdraft, made even jobs in the so-called booming computer industry look less than completely secure.

But, for a change, in Altergo's case the recession wasn't at the root of the problem. Computer industry employers in London and Greater London have largely escaped that threat. Economic crises tend to hit the industrially weaker parts of the country first and the majority of workers in London and the South-east hardly know that such a crisis exists.

But if there haven't actually been mass redundancies among computer staff in the London area, recruitment has slowed noticeably, mostly because staff turnover has been reduced drastically to a standstill.

Altergo had to face growing debts without any promise of cash injection. Business analysts poring over the bare bones of the stricken company have concluded that the cause of the crash was mis-management.

Most of the big manufacturing companies in Greater London who employ data processing staff obviously live the cash flow problem on their minds. One way of managing expenditure when revenue can't be guaranteed is to be very cautious about recruitment - people are an expensive asset.

As with other parts of the country, a contrast appears between the manufacturers in any industry who employ a data processing department and computer industry companies such as software and systems houses.

Jobs with computer manufacturers and software houses are still plentiful but companies outside the computer industry keeping a wary eye on the inroads of the recession have had to find ways of saving money. Data processing departments are almost always on the list of places in which the belt can be tightened, after advertising and graduate recruitment.

Kodak, for example, at Ruislip in Middlesex, says it hasn't recruited data processing staff for some time. "People aren't leaving," said recruitment manager, John Harding. "We haven't taken anybody on for six months."

But a company like CMG (Computer Management Group) in Greenford which does a variety of data processing work is in a stronger trading position than some of the manufacturing industries and still recruits fairly steadily. The chief systems analyst at CMG, Richard Summers, said that although staff turnover has slowed over the past year or so, the company

is still taking on staff.

CMG is only interested in experienced staff and subscribers to the view that training computer staff is both expensive and risky.

"We don't take people without experience," said Summers. "It's pure commercial sense not to. Training is a very expensive pastime."

"The success of training is too dependent on the individual," Summers added. Instead, CMG takes on a variety of expertise.

"At the lower end," said Summers, "we look for people with three to four years in commercial analysis or programming. And at the other end we may be after very experienced high level consultants with experience in excess of 10 years."

CMG is a traditional software house and consultancy which does development work on every size of machine including IBM, Burroughs and Honeywell. In a company like this, software staff think twice before they leave for unknown territories, with shock waves still reverberating from the Altergo crash.

Summers said that CMG's staff turnover is down and explained it as the result of the recession which makes people loath to leave jobs they think are secure.

# Still a demand for software skills in the big DP departments

**Commercial strength of area is good for computer staff, says Margaret Park**

British Telecom's Data Processing Executive in West Drayton is in the opposite camp on the contentious issue of training.

BT takes far more data processing staff as trainees than it does those with experience. One reason is

probably the cost of buying expertise.

Most public sector employers (and BT is still public although the government is in the process of selling it off to the private sector) are limited in recruitment by cash shortages. Public sector

spending is fiercely controlled by the government.

Local authority employers, for example, will always say they are prepared to train computer staff from scratch because they can't compete with the substantial

salaries offered by private business to programmers and analysts with a couple of years' experience under their belts.

Job opportunities for computer staff are fairly plentiful in the Greater London area because although a certain amount of belt-tightening is going on, the industrial and commercial base of the region is still sound.

This means that for the big data processing departments, whether part of a manufacturing company or in a specialised computer firm, there is still a demand from outside customers for bureau facilities and software skills.



Computer companies in Greater London have largely escaped the threat of the recession.

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Please reply initially to: Pat Cooper or Isobel Hart, CAP London Commercial, 233 High Holborn, London WC1V 7DJ. Tel: 01-831 6144.

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## MICROCOMPUTER DATABASE SUPPORT

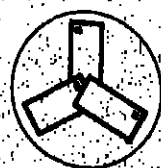
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A good understanding, or better still direct experience of DBMS techniques is essential. Additional knowledge of block structured language such as Pascal or Algol would be an added advantage, as would the ability to co-ordinate and provide both the pre and post sales support of a Database Management System which operates on a wide variety of 8 and 16 bit microcomputers. Close liaison with Clients and prospective Clients forms part of the job function to ensure the products are used to their full potential and adapted to suit different environments.

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Please write in confidence with full CV or telephone Jan Szymankiewicz, Director, Business Modelling and Systems, quoting reference EG/BMS/37

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## OPPORTUNITIES IN GREATER LONDON

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For further details contact Linda Berry Tel: 01-576-1393 or write for an application form to BBC Appointments, London, W1A 1AA (quoting ref. 2375/CW and enclose s.a.e.) Tel. 01-580-4468 Ext. 4619

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#### SYSTEMS ANALYST £10,130

The High Commission is seeking an experienced Systems Analyst familiar with IBM installations who can demonstrate a successful track record in designing and specifying on-line systems using CICS and/or DBMS. It is expected that the successful applicant will possess relevant academic qualifications and substantial computer industry experience.

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Please send full curriculum vitae to the Recruitment Officer, Australian High Commission, Australia House, Strand, London WC2R 4LA, to arrive not later than May 7th, 1983.

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## SALES BIT

Quality of Management — 49

## Sold on the efforts of a headhunter

I DO not accept "headhunting" as a convenient collective expression for the whole recruitment process. Rather, I see it as a term devoted to the process of direct search — "body-snatching", "piracy", call it what you will. It is something quite apart from agency and advertising-based recruitment, where the process of candidate generation is to some degree passive, being dependent on the credibility and professional reputation of the advertiser and the persuasive capability of advertising and copywriting skill.

"Headhunting" is as far from agency and advertising-based recruitment, as a mercenary is from civil defence — one takes, the other accepts.

Many companies are from time to time seduced by the simplistic efficiency of direct search (that's what they call it when you steal an employee from someone else). You simply state the kind of person you want, the agency finds out where he is (usually working for one of your direct competitors), and persuades him to come and talk to you about your opportunity of a lifetime. What could be more effective? What could be easier?

Unfortunately, you are not the only company with such a need, or considering such methods; your competitors are bound to be in the market, too.

So they go to an agency that specialises in "headhunting" (that's what it's called when someone steals one of your employees), and guess whose company will be on the hit list?

The trouble is that today's client is almost unavoidably tomorrow's victim. This has to present a compromise that is difficult to resolve at the ethical level.

"Headhunting" salesmen is easy: you just contact the telephone operator of the appropriate branch of a relevant company in the right market sector and ask her. She is accustomed to people phoning with vague requests for product information and names of salespeople.

Managers are a different proposition. The more senior, the more aware they tend to be — or the more cynical, depending on your point of view.

Let's take what is, I hope, an objective look at some aspects of the "headhunting" process purely from the intending employer's point of view.

Perhaps you are desperate for salesmen. You have tried the agencies, you have advertised, but you just don't seem to be able to resolve your problem. So you consider using the services of a "body-snatcher". It is reasonable to assume that any candidates put forward will have comprehensive direct experience with a track record of sales success not only with your kind of product, but also within your marketplace — he will be a complete salesman.

If the "headhunter" is actively pursuing a job specification, rather than merely engaged in unpremeditated conversations with people who approach him, it would be unreasonable in the circumstances to be otherwise. So there is a considerable attraction in this process, for if it is successful it can produce salespeople from whom a more rapid return can be expected rather than from those with partial experience who tend to emigrate from agencies and advertising.

Having said that, I believe some other rather subjective questions need to be asked. First, why should a salesman who is successful elsewhere, abandon all his established prospects and colleagues, to come and work for you for similar rewards? This is a very powerful question.

Then there is the attitude of the candidate himself. He didn't contact you, you approached him. Consequently, there is a considerable likelihood that he will develop the arrogant and demanding attitude of anyone who feels he is being pursued. He may feel a need to dictate the terms.

For a start, he will expect to get something special in order to justify the move. And if a salesman is prepared to leave his present employer in the lurch "for a few dollars more", is there any less likelihood that he will leave you as readily as soon as some other company in need of an instant solution to a recruitment problem comes on the scene? The answer has to be No! Loyalty can often be to the detriment to the employee, but when this quality is cancelled out by avarice, it is dangerous for all concerned.

"Headhunting" managers? I have to admit I feel much more resolved to in necessity than with salespeople. If a company loses a senior manager or creates a new management post and has no suitable material internally, what else can it do? It's all very well making the valid criticism that it highlights the company's failure in personnel development, but that doesn't take away the problem. If a senior manager feels he is stagnating, or his position is in jeopardy, his external alternatives are extremely limited due to the numerical limitations of his level of job. In such circumstances, one of his limited range of possibilities is to make himself a passive target for those "headhunters" whom he knows to frequent his desired terrain.

In a summary, all "headhunting" is not, in my opinion bad. The difficulty is deciding where the good leaves off. All one can do is consider the implications and alternatives in terms of the company, your existing employees, the prospective recruit(s) and not least, yourself.

Alan Williams

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